

• APRIL 1957

BUTANE-PROPANE

A CHILTON PUBLICATION

News

What's the fastest
growing market
for LPG?

HOW TO GET A
SMALL
BUSINESS LOAN

HEADQUARTERS FOR L.P. GAS INFORMATION SINCE 1931



... when you call ANCHOR

When you pick up the telephone and call Anchor, you have a direct line with one of the largest marketers of LPG and other petroleum products in the nation. When you contract with Anchor, this huge organization becomes part of *your* organization . . . it gives your business a firm foundation. It means you are backed by suppliers offering every service needed by LPG dealers. Anchor's vast underground storage plants and huge transportation facilities insure that you receive supplies of high quality gas where you need it and when you need it. So, make Anchor part of *your* organization. Contract with Anchor. Call Tulsa, CHerry 2-7261.

ANCHOR PETROLEUM COMPANY • TULSA
SALES OFFICES: Des Moines, Shreveport, Toledo, Houston, Long Beach, Oklahoma City, Midland, San Francisco, Seattle, Hattiesburg, Calgary, Canada.

New HACKNEY double-bottoms lead profitable double-lives



Doubly free from ice, snow, mud. Unlike new cylinders with inwardly curled foot rings, Hackney Double-Bottoms eliminate dirt- and moisture-collecting crevices. Note the easy handling of these cylinders.



Double strength for longer life. Seamless extra head is hermetically sealed to cylinder bottom with X-ray controlled welding. Integral base ring boosts double-bottom strength. Cylinder is easier to roll on all kinds of surfaces.



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Manufacturer of Hackney Products

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cylinders



systems



fuel tanks for
trucks and tractors



lift truck tanks



tank trucks



bulk storage tanks

LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS



"Same old plant...but now it holds twice as much"

... I said to the boss. Me? I'm his plant superintendent—often his whipping boy. I was thinking back to the days when we had growing pains and storage troubles. We had added a lot of new customers. And many of the old customers started using more gas. Our delivery trucks were hopping all over the county trying to fill the demands. As for me, I was going nuts begging LPG from our suppliers and shuttling tankers in and out of the yard.

"Boss," I finally said one day, "either you add some more storage capacity to this plant or you can go find yourself a new boy."

"Hang onto your hat," he replied. "I've done just that—I've ordered meters."

Well, this was a new twist. "What will meters do except measure the amount each customer uses?" I asked. "They'll do that, for sure," he said, "and be a big help to our bookkeeper, but get this—with meters we can use our customers' tanks and bottles for storage. We can fill them anytime, schedule our trucks so as to eliminate cross hauling, even buy LPG in quantities at off-season prices."

As usual, the boss was right. Guess that's why he's the boss. But we can't put off adding to our plant storage much longer. You see, metered service is the best sales tool we ever had.

ROCKWELL LP-GAS VAPOR METERS



METERED SERVICE

*The Modern Way
To Sell
The Most
Modern Fuel
To Rural America*



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**AT
CONTRACT
TIME . . .**



LOOK US OVER, TOO!

We cordially invite your careful appraisal of
ALL the factors . . . at a fair price . . . which
make one of OUR contracts a top deal for
YOU!

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APRIL 1957

BUTANE-PROPANE

News

Volume 19-Number 4

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Standard!... On tens of



REGO 7141 SAFETY CHECK CONNECTORS FOR LIFT TRUCKS ASSURE MAXIMUM SAFETY, CONVENIENCE

Here is the one safe and convenient means of connecting portable containers in lift truck applications. Because the connection seals before the checks open, there is *no* fuel loss upon connection—therefore, no frost bite. It provides a fast filling rate of 22½ gallons per minute, with low pressure-drop. And, like all other RegO LP-Gas units, it is listed by Underwriters' Laboratories, Inc.

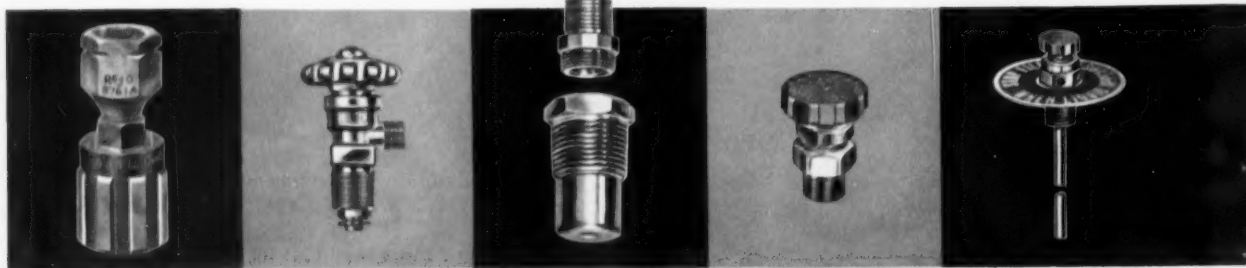
RegO 7141 Safety Check Connectors are already in service on tens of thousands of propane-powered lift trucks. Yet the surface has barely been scratched in this fast-growing new LP-Gas market.

Here, and wherever LP-Gas is used for either power or heating, RegO Quality protects your investment, your profits, your peace of mind—it puts you first with the finest.

It's easy to sell the many advantages of LP-Gas for lift truck operation, and it's easy to convert existing equipment to the use of this modern fuel. Write today for free RegO Catalog L-415. It can help you cash in on profitable, new business—both in equipment and added fuel volume.



Send for this FREE Catalog



These RegO Products, too, are at your service for Combustion-Engine Conversions

7145 Adapter

Facilitates direct connection to lift truck cylinder valve from POL charging hose. Automatic shut-off. No gas loss.

7140A Cylinder Valve

For filling or withdrawing liquid from ICC lift truck cylinders.

7545K Relief Valve

For use with ICC lift truck cylinders. Fully recessed for safety.

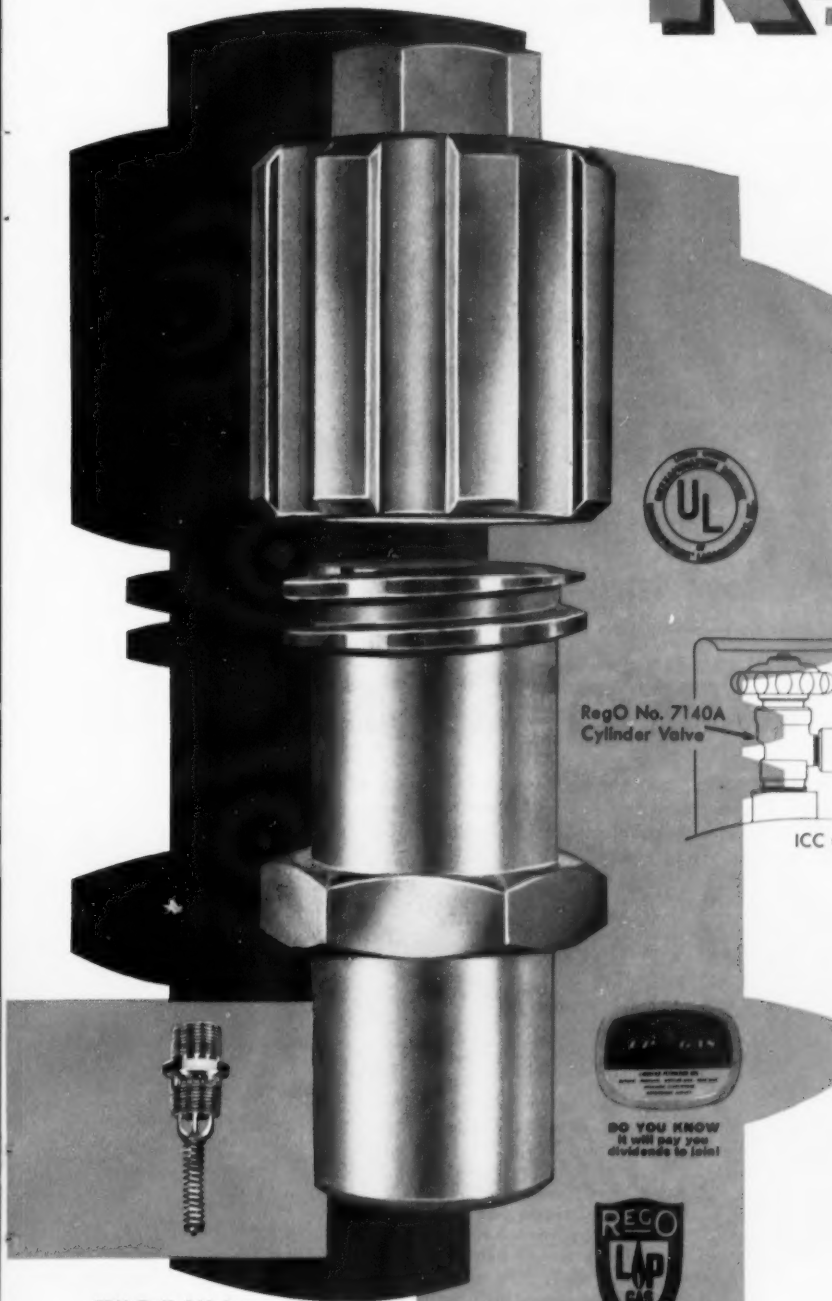
7547A Filler Valve

Double check filler valve with 19 GPM capacity.

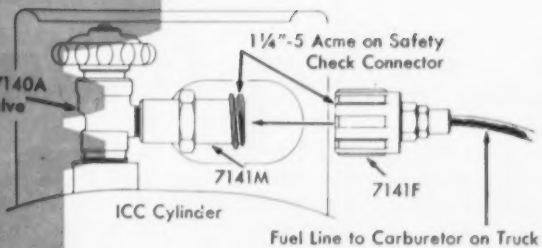
3165 Series Fixed Tube Liquid Level Gauge—Vent-type valve for filling containers to maximum permitted level.

thousands of installations

REGO®



Rego No. 7140A
Cylinder Valve



DO YOU KNOW
It will pay you
dividends to join!



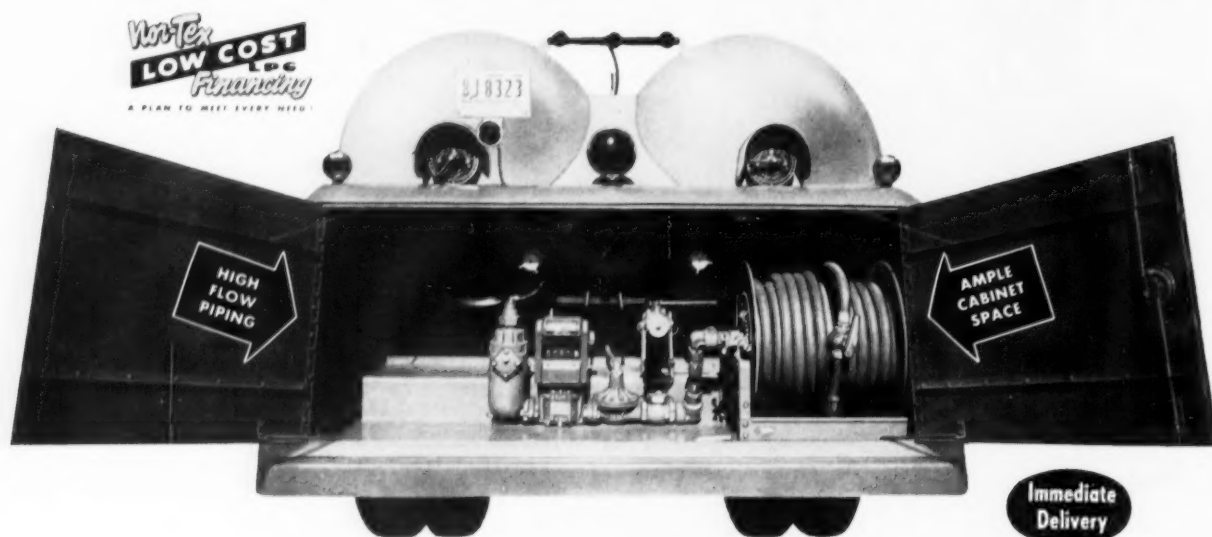
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The **BASTIAN-BLESSING** Company

4201 West Peterson Avenue • Chicago 30, Illinois

7541 Relief Valve
Fully recessed valve
with integral pipe-away
connection.

"Perfect Balance" *Nor-Tex* ...CUSTOM BUILT TO YOUR



Every "Package Unit" Priced Completely Equipped and Ready To Go... Excise Tax Paid.

Best Way to **Cut Costs-Boost Profit**

For value, Nor-Tex ROUTE-RATED "Package Units" can not be beat! Low delivery price includes features not found in any other combination. They are plumbed, perfectly balanced and come complete with Recessed Fuel Tank and Viking KK 200 Pump with Mechanical Seal, 50' Filler Hose, ICC Lights and Power Take-off with Spline Jack Shaft. The finish is White Enamel over Red Oxide.

Balance Your Load The *Nor-Tex* Way **FINANCE THE BALANCE**

WRITE, WIRE
OR PHONE
FOR PRICES



National Sales Agents for

Manufacturers of Fine LPG Equipment

Whatever your needs in LPG equipment there is a factory tailored Nor-Tex unit ready for you. We are truck distributors and we manufacture LPG Truck and Transport Tanks, all types of LPG Tractor and Motor Fuel Tanks, Portable LPG Filling Stations, Trailer Tanks, LPG Storage and Domestic Tanks, Farm Carts and Anhydrous Ammonia Tanks, all built by men with years of Butane-Propane bulk plant experience. Phone, wire or write us. Interested attention, experienced assistance and helpful suggestions are always yours for the asking.



NORTH TEXAS

UNITS ARE ROUTE-RATED[®] INDIVIDUAL ROUTE NEEDS

Put An End To Hazard Buying of **DELIVERY UNITS**

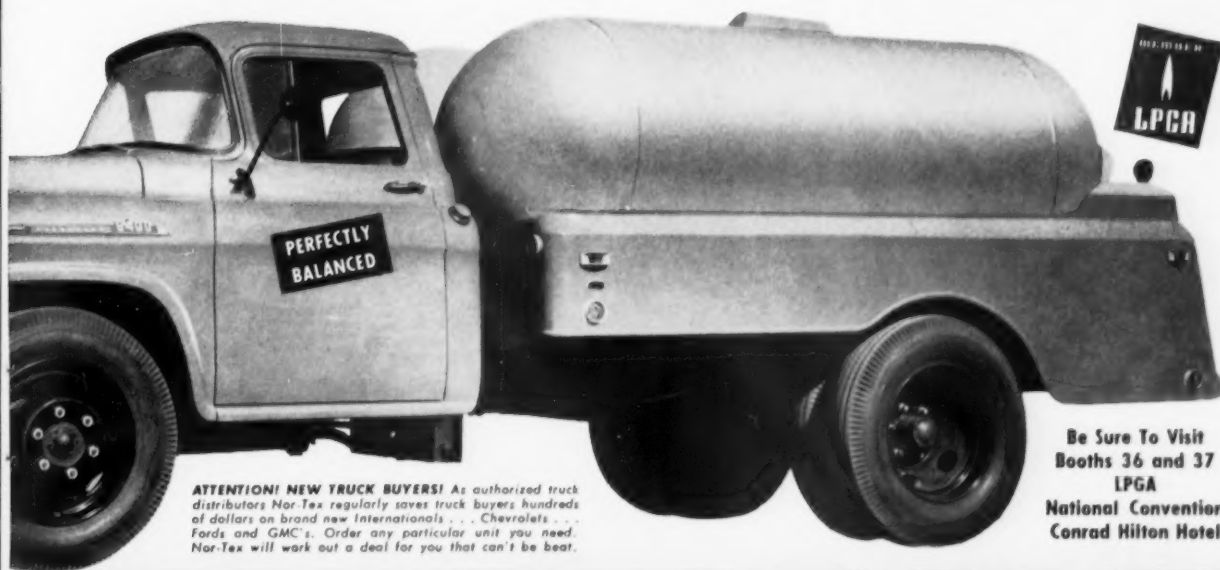
Today, the LPG delivery unit size requires greater care of selection than ever before. LPG Industry reports state: "Habit buying and guess-calculation of delivery unit sizes by bulk plant operators becomes more and more hazardous as costs increase and profit declines. The need for job rated units is greater than ever." These reports point up the

famous Nor-Tex route rating service. Nor-Tex "ROUTE-RATED" units are built to fit an individual route's need, based on the length of the route, the terrain covered, convenience of cabinet location, and number of trips required on peak loads . . . keeping a keen eye on the future. May we help you?

Follow the RULE for PROFIT Today . . .

"Right Sized Units On Right Sized Chassis for the Job"

LPG dealers now using Nor-Tex "ROUTE-RATED" delivery tank units have reported profit increases up to 19%. "Route-Rating" has effectively INCREASED their "gallons-per-mile" DELIVERIES and drastically REDUCED their per gallon DELIVERY COSTS! Nor-Tex units are easier to handle and have greater maneuverability. Now 1200 to 2000 WG Tanks are available for use on short wheel base trucks. Note 1650 WG Unit pictured below.



ATTENTION! NEW TRUCK BUYERS! As authorized truck distributors Nor-Tex regularly saves truck buyers hundreds of dollars on brand new Internationals . . . Chevrolets . . . Fords and GMC's. Order any particular unit you need. Nor-Tex will work out a deal for you that can't be beat.

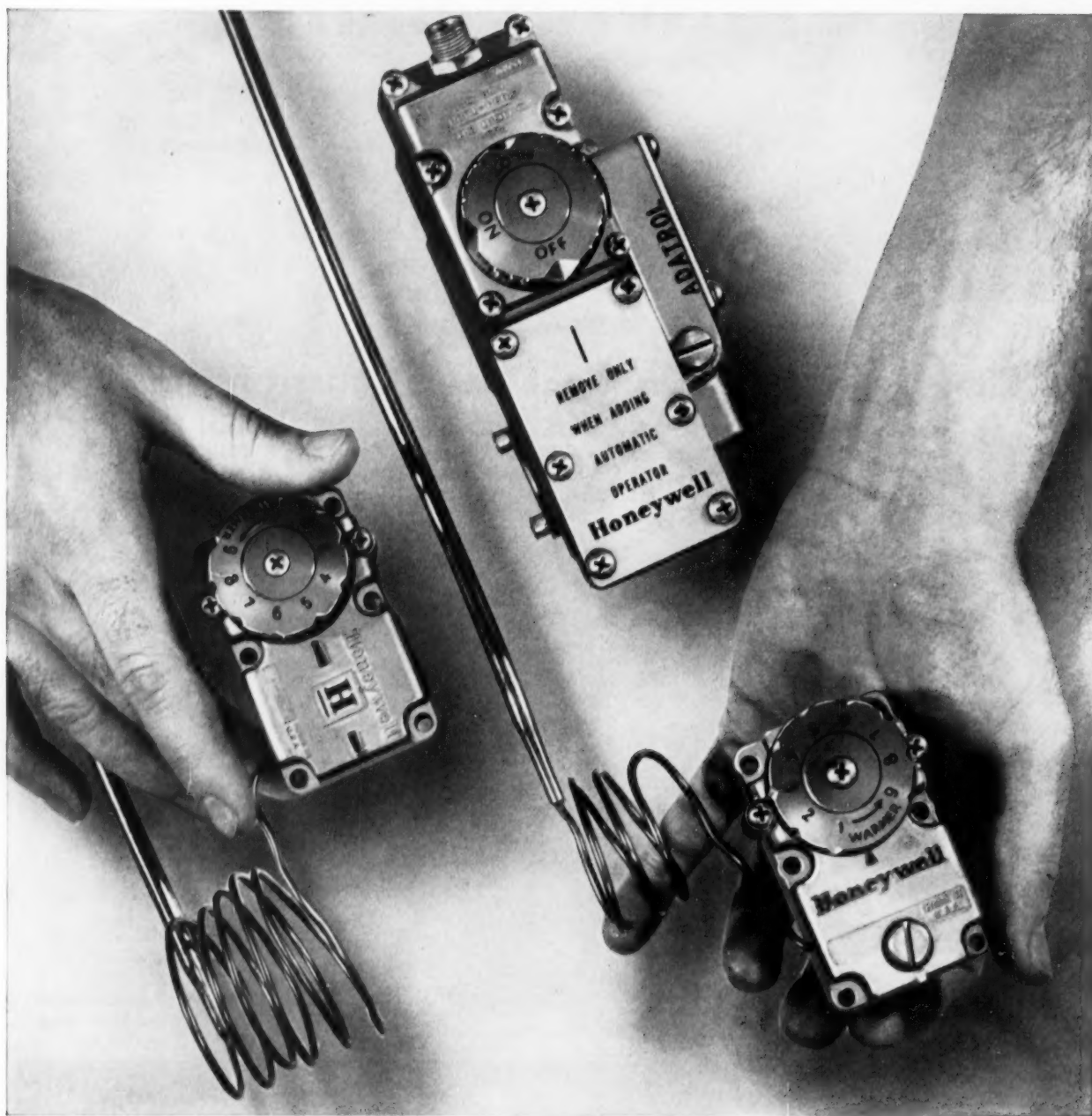
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Booths 36 and 37
LPGA
National Convention
Conrad Hilton Hotel

TANK CO.

P. O. BOX 1219
DENTON, TEXAS
CENTRAL 5416

*Sensational new addition to Honeywell's Adatrol line—
for thermostatic control of room and wall heaters*

Now Honeywell's Adatrol with both



This photograph shows the relatively small size of Adatrol and Adatrol-Modusnap Components. At left: T5000 Adatrol thermostat. Center: C592 Pilotstat. Right: T5001 Modusnap thermostat. Installation time, based on actual tests, can be as short as 5 minutes.

snap-action and Modusnap^{*} thermostats

*Additional pilotstat plus choice of add-on thermostats gives you
either snap-action or snap-modulating action*

NOW YOU can choose between the famous Adatrol with snap-action thermostat or the new Adatrol-Modusnap which offers both snap-action and modulating control.

And whichever you choose, you'll be taking advantage of the dependability and trouble-free performance of Honeywell time-tested components.

Honeywell's new Adatrol-Modusnap automatically fits

the heater to the weather. In mild weather, the snap action valve operates at "off" or minimum flame. In colder weather modulating control is maintained between minimum and maximum flame to give the right degree of heat for comfort.

This sensational new Honeywell development enables room and wall heaters to operate at precisely the right level to compensate for light and heavy loads.

*Meet your specific needs
with Adatrol or Adatrol-Modusnap*



C592 Pilotstat—fits any floor furnace, gas room heater or wall furnace.



Plus T5000 Adatrol thermostat—with self-contained, snap-action thermostat, with or without hi-low bypass.



Plus T5001 Modusnap thermostat—with modulating snap-action thermostat for both off-on and modulating firing.



Equals V5153 Adatrol—combination Pilotstat-thermostat unit for all types of gases and all floor, wall and room furnaces and heaters.



Equals new V5157 Adatrol Modusnap—combination Pilotstat-thermostat unit with modulating thermostat and both A and B valve.

*Both Adatrol and new Adatrol-Modusnap
give heaters a flexibility never before
available—plus these important features:*

- Stock only pilotstat and thermostat, or combination package already assembled—fits all your gas room and wall heaters.
- Quick, inexpensive installation saves time, money.
- Minimum expansion, contraction noises.
- All necessary safety features including 100% automatic shutdown in the event of pilot failure, plus safe lighting on start-up.
- Fast, sensitive control.
- Suitable for all gases.

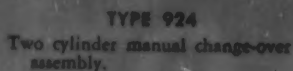
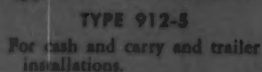
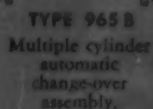
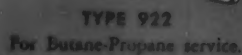
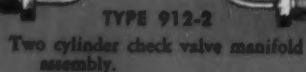
To order your Adatrol or Adatrol-Modusnap, or to get further information, call your local Honeywell office or write to Honeywell, Dept. BN-4-150, Minneapolis 8, Minnesota.

^{*}trademark

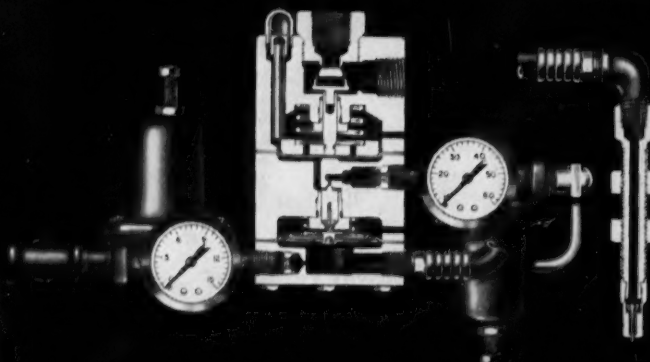
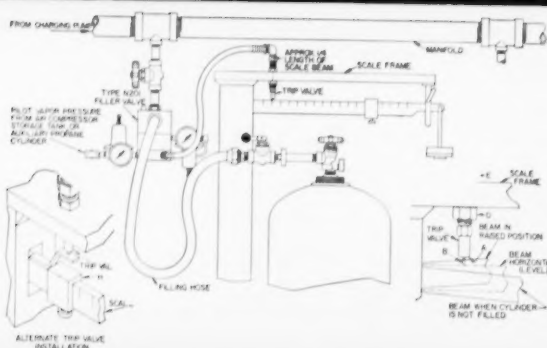
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First in Controls



New! Accurate!





TYPE N201

AUTOMATIC CYLINDER FILLING VALVE

Just a touch of the Beam!

Not 99 lbs. . . . , Not 101 lbs. . . .

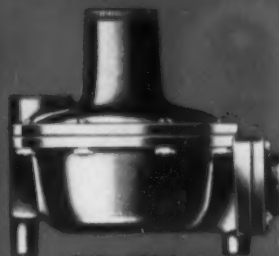
but exactly 100 lbs.

FISHER GOVERNOR COMPANY
MARSHALLTOWN, IOWA • WOODSTOCK, ONTARIO



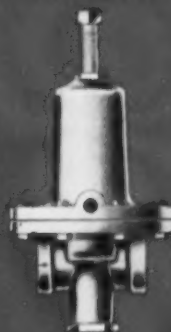
TYPE 923

Two cylinder integral check valve manifold assembly.



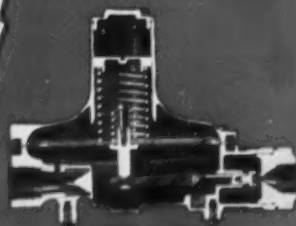
TYPE 922H

High pressure regulator.



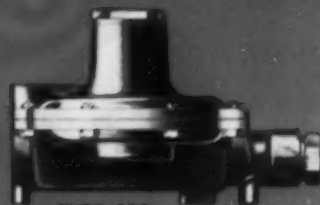
TYPE 64

High Pressure,
1st stage regulator.



TYPE 722V

The "Work Horse" regulator for
1000 gallon and larger tanks.



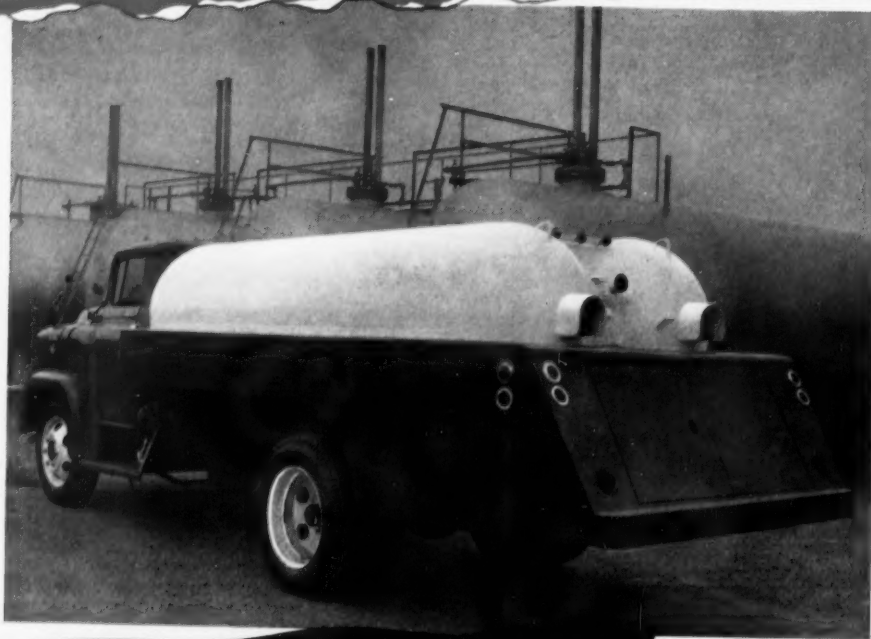
TYPE 932

The "Husky" Standard 500
gallon tank regulator.

CHARLOTTE Engineered TRUCK TANKS

are quality-built for performance you can count on!

Charlotte's NEW Twin comes in 1,300 through 2,400 gallons (W.C.). NEW singles from 1,250 through 1,800 gallons (W.C.).



*Unique piping and high speed pumping
lets you deliver more customers per day!*

NOW you can deliver **more** than twice the capacity of your truck tank every day of the year for many years to come! That's the **TOP PERFORMANCE** you get with the **NEW Charlotte Engineered Truck Tanks!**

Charlotte's unique piping and high speed pumping system drastically cuts the costs of your daily deliveries.

Charlotte's overall quality construction gives you maximum safety,

minimum maintenance and longer service.

You pay a little more in the beginning for these quality-built Charlotte Tanks because they're worth more to you in actual operation. Charlotte Tanks will make more money for you and give you performance you can count on!

For better all-round service, order your Charlotte Engineered Truck Tank **NOW** to fit your present truck or a new chassis of your choice.

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Engineered Truck Tanks,
Dehydrated LP Gas Systems,
ASME Cylinders.



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**BPN**

Washington Report

From BUTANE-PROPANE News Washington Bureau

By NEIL REGEIMBAL • Correspondent

Flood insurance almost here

Federal flood insurance for businessmen and home owners is finally within sight.

By late spring, flood insurance will be available for the first time, government officials handling the program say.

Coverage of up to \$250,000 for a business or \$10,000 for a home will be sold. Policies will be written by 5000 private insurance firms and 150,000 agents and brokers. The government will pay 40 per cent of the premiums.

Rates to buyers of the new flood insurance will run between \$1.50 and \$12 per \$100, depending on coverage and location. This will be expensive insurance, officials admit, but should be worth the price in many areas.

Last year's floods cost many L. P. gas dealers heavy sums in lost equipment and facilities.

End not seen for excise taxes

The chance for any broad-scale reduction in the bothersome excise taxes on appliances, freight, and other goods and services is dim this year.

Congress is considering a technical revision proposal, which would provide hundreds of minor changes in the laws. It will be of some help to businessmen by clearing up confusion and in some cases reducing paperwork. But it does not provide for repeal or reduction of excise taxes.

Later this year, a House Ways and Means subcommittee has promised to start a study of excise tax rate cuts. Chances are, however, that the study will not be completed in time for Congress as a whole to go through the long process of amending and passing it.

An amendment sought by the Liquefied Petroleum Gas Association, to remove the two cent excise tax on L. P. gas used in non-highway vehicles is not in the technical bill. Committee sources indicate that it is unlikely that this tax will be removed any time soon. The Association complains that diesel fuel used off the highways is non-taxable, and thus the tax on L. P. gas is discriminatory.

Labor shortage by 1965

Businessmen will have to depend on young, inexperienced workers, mostly women, and on elderly men to meet increasing labor needs in the next 10 years, the U. S. Labor Department reports.

Studies by the Department show that while the population will increase enough by 1965 to supply an added 11 million workers which will be needed, there will be almost no increase in the "prime" working group—men from 25 to 45 years of age.

Some 3 million or more additional sales workers and clerks will be needed in the next decade, the Department forecasts.

In order to make the numerical increase adequate in terms of abilities, Labor Secretary Mitchell warns, the nation must make a "substantially greater effort" to produce workers with a high degree of education, skill and creativeness.

"Consumers' bureau" bill faces Congress

A perennial attempt to establish a "consumers' advisory bureau" in the U. S. Commerce Department is again before Congress.

The bill was introduced this year by Rep. Isidore Dollinger (D.), N. Y. It would create the new bureau "in order to provide the people of the United States with more complete and accurate information concerning the relative quality, utility, and abundance of the various types of consumers' goods which are available on the retail market."

Appliances would be among the products, and L. P. gas among the services studied.

Freight rate increases spread

Freight rate increases are spreading. Trucking companies now have permission to increase their rates from 5 to 7 per cent, to match recent "emergency" hikes granted the railroads.

Hearings will be held by the ICC, at Washington, D. C., and at San Francisco in April on requests by the railroads for further increases of 10 per cent in the South, 15 per cent for cross-country shipments.

Railroads had asked for a full 22 per cent in all areas but the South, where 15 per cent was requested. The truck increases follow the earlier railroad hikes of 7 per cent in the East and cross-country shipments, and 5 per cent in the West and South.

Personalities . . . are part of the trinity story!



Meet Mr. C. J. Bender, president and founder of Trinity Steel Company. Under his leadership, Trinity Steel has grown from its humble beginnings two short decades ago to the present world-wide operation, with two large manufacturing plants in Dallas and Mexico City. Mr. Bender has pioneered and introduced many new improvements in the industry such as the exclusive 5¼" gallonage gauge for "Eveready" systems and the new fast-filling Eveready Tricon System.

Mr. Bender is never too busy to visit with anyone who calls at his office . . . no appointments are necessary. He is proud of his many friends in the LP Gas Industry and he believes that the industry has a fabulous future ahead.

NUMBER ONE IN A SERIES

TRINITY STEEL COMPANY . . . WORLD'S LARGEST FABRICATORS OF T-1 TRANSPORTS!

the NEW TRINITY STORY



Write today for your beautiful 18-page booklet covering the entire Trinity line of truck tanks, storage tank and transports.



Tanques de Aceros Trinity S. A.
Calle Poniente 150-#734
Mexico 16, D.F.



4001 IRVING BLVD. DALLAS, TEXAS FL7-3961

how to sell the fair sex on the

FAMILY FARE OVEN!



Tired of half-baked sales?

Then stop selling *whatzits*, and start selling *what they do* for the fair lady. Example: the performance of our Family Fare Oven. Families today are larger . . . more mouths for mother to feed. So tell how she can now cook so much *more*, so much more *easily* in this one giant 26-inch oven . . . an entire meal for her tribe, or a dinner party for dozens. Wonderful for "carload" baking, too—pies, cakes, cookies—to store in the freezer for future use. And she can count on perfect results *every time*, thanks to the Red Wheel oven-heat regulator.

Explain how the special Roast-Guide ends fork-testing, clock-

watching and oven-peeking . . . every roast gets *done*, exactly right. And show off the triple-thick Fiberglas insulation that keeps the oven hot, kitchen cool; plus the Floating Hinge that prevents oven door fly-ups, and cake flatten-out.

Emphasize the leisure time she'll gain, too, with the Clock Control that starts and stops the oven *automatically*—takes over the preparation of a complete oven meal, while mother takes off.

All this added convenience in a space-saving 36-inch range. Just a few of many attractive Magic Chef features . . . that women find irresistible . . . when you use the right approach!

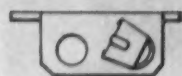
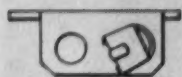
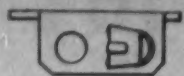
get GEARED TO GO for a PROFIT with

Magic Chef

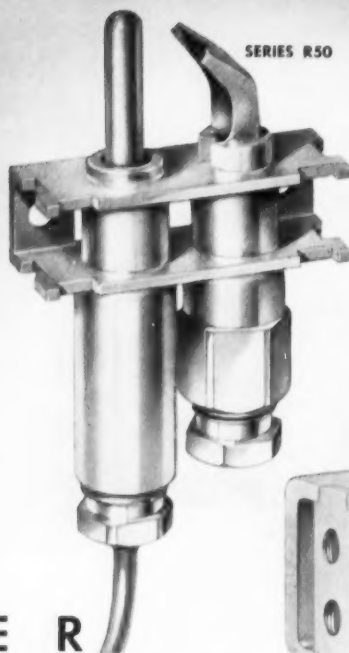
- Red Wheel Regulator
- Automatic Roast-Guide
- Magitrol Burner
- Magitrol Griddle
- Magic Flame Uni-Burner
- Magic-Lite Pilot
- Swing-Out Broiler
- Automatic Broiler

MAGIC CHEF INC., ST. LOUIS, MO.

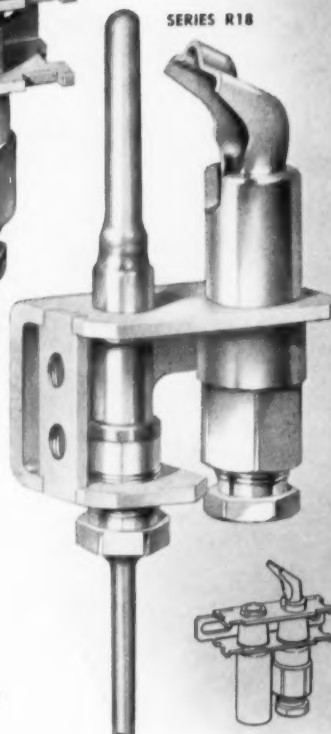
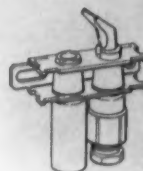
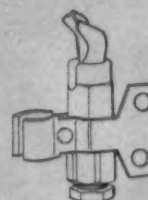
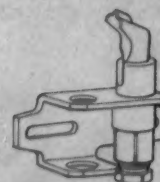
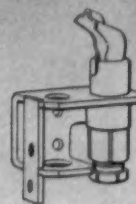
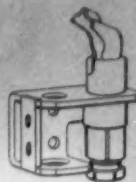
the GAS RANGE you can count on in '57!



TIP POSITIONS



SERIES R50



SERIES R10

TYPE R
BASO[®]
PILOT BURNER
to fit every need!

B The new, non-linting Type R Pilot burner comes in three tip positions and in a wide variety of mounting brackets to fit all kinds of gas appliances. Thus the advantages of this trouble-free non-aerated pilot can readily be yours.

B The R50 Series at 300 Btu./hr. or the R10 and R20 Series at 700 Btu./hr. have the same stable, lint-free performance, employing but a single, blue flame to ignite the main burner and heat the thermocouple whether mounted horizontally or vertically.

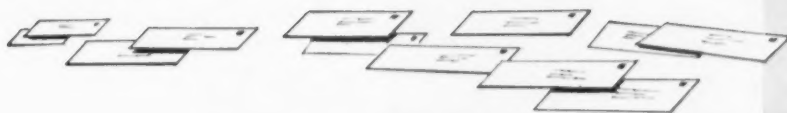
WRITE FOR BULLETIN.

BASO INC.

(Formerly Milwaukee Gas Specialty Company)

MILWAUKEE 1, WISCONSIN

Dept. SB-2

**BPN**

Letters

Cleansing brass fittings

Georgia

Some months ago I seem to recall reading in BUTANE-PROPANE *News* of a formula to be used in cleansing brass fittings which have become discolored due to exposure to weather, etc. If I am correct on this, please advise us as to what is used.

B. L. C.

In checking further on the cleansing of brass fittings we have found that the Copper & Brass Research Institute, 420 Lexington Ave., New York, N. Y., has some bulletins and pamphlets on the maintenance and cleaning of bronze and brass. You can obtain these pamphlets by writing to them and requesting the information.

Also, we have found that the Cee Bee Chemical Co. Inc., 9520 E. Cee-bee Drive, Downey, Calif., manufactures and sells a solution for cleaning copper alloys such as brass and bronze. We have talked to one company here which is using it and obtaining good results.—Ed.



Effect of altitude on pressure

Colorado

I wish to present an orifice problem in reference to heating equipment. According to AGA requirements the input rating of an appliance at sea level is supposed to be reduced 4 per cent for every 1000 ft of elevation.

For an elevation of 4000 ft this would mean a reduction in input of 16 per cent. On 50,000 Btu this would mean an input of 42,000 Btu which with propane would reduce the orifice size from a #45 to #48.

This calculation presents no problem but, as I understand it, a cubic foot of propane has 2521 Btu under standard conditions of 60° F and atmospheric pressure at sea level. If one applies Boyles law to

this problem and uses the #48 orifice for the 50,000 Btu heater the actual Btu input will be considerably less than the high altitude rating as above calculated.

It all boils down to this: How accurate are the conventional orifice tables at 4000 ft above sea level?

W. W. B.

The AGA requirements state that the input shall be reduced 4 per cent for every 1000 feet of elevation. This does not mean that the area of the orifice is to be reduced 4 per cent for each 1000 ft.

As we all know, air is "thinner" at higher altitudes. Likewise, gases at atmospheric pressure are expanded and thinner at high altitudes. A cubic foot of propane vapor at 60° F and sea level, as you point out in your letter, will contain about 2521 Btu. If this same cubic foot of butane is carried to an elevation of 4000 ft and allowed to expand to atmospheric pressure there, it will then measure 1.155 cu ft. However, it does not contain any more Btu's than it did at sea level. So a cubic foot of the expanded gas measured at 4000 ft elevation will contain only $1/1.155 \times 2521$ or about 2185 Btu.

This lighter gas will flow through the orifice faster than the heavier gas at sea level but not fast enough to make up for the lower heating value. Because of this, the input to an appliance is automatically reduced part of the 4 per cent.

The appliances produced by some manufacturers may perform satisfactory without the full 4 per cent per 1000 ft elevation reduction in input at the higher elevations than others. The AGA has found that the 4 per cent figure is safe for all tested appliances.

It is suggested that the appliance manufacturer be consulted and his recommended orifice size be used for the elevation in question. The manufacturer has the results of performance tests and knows what the appliance can do at the higher elevations.—Ed.

Tank volumes

Illinois

Recently, I purchased your Butane-Propane Power Manual and two things have come into the picture about some additional information. I would like to know if you have an enlarged chart of the one that is on page 320 so that I may be able to obtain greater accuracy in locating the outage valve.

The other thing is the working depth. I consider the working depth as the inside of the tank. My associate at the office says the outside is the working depth. Kindly help us out with our problems.

J.J.S.

We regret that we do not have an enlarged chart similar to the one on page 320 of the Power Manual. This chart is not meant to be used as a substitute for accurate tables or calculations of tank volumes, or for establishing working depths for fixed liquid level gauges. The chart is meant for quick, rough checking of liquid volumes in cylindrical tanks.

You are correct, the working depth should be established on the inside diameter.—Ed.



Protecting tubing with cement

Connecticut

For a great many years we have recommended copper for underground installations of all sorts with the exception of salt marshy soils and cinder fill.

Copper has been to our knowledge satisfactory for asphalt installations and in fact when installed in salt marshy soils or cinder fill, asphalt coating is used for protection.

Steel or wrought iron of course would be corroded much more rapidly than copper under any of these corrosive conditions and would also have to be protected.



ANCO SERVICE STARTS WITH YOUR ROUGH SKETCH

Because ANCO-FLINT combined facilities are unequalled ANCO can start with your idea and complete, at competitive costs, your entire LPG project — Engineering — Tanks — Equipment and Installation.

Flint tanks, all sizes, and systems meet or exceed the requirements of national and local Codes and Laws. All allied equipment warehoused by ANCO represent the best known names in the industry.

FLINT STORAGE TANKS • FLINT DOMESTIC SYSTEMS • ANCO ICC "Pig" CYLINDERS • PREFABRICATED BULK PLANT AREAS: and Hose, Couplings, Compressors, Pumps, Unloading Risers, Loading Risers, Rotary and Magnetron Gauges, and all types of Valves.

Anco engineers, layout men and warehouse supervisors are available to assist you in planning, equipping and installing all or any part of your LPG project.

Write for ANCO'S 1957 L.P.G. Equipment Catalog.



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ANCO is the Largest Stocking
Distributor in the U.S. of
CORKEN Equipment.
— All Models Available —

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Tulsa, Oklahoma • 21st at Union • LUther 4-6187
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East St. Louis, Ill. — 6503 St. Clair Ave. (Hy. 50) — EXpress 7-0200
Des Moines, Ia. — 327 Insurance Exchange Bldg. — CHerry 4-5347

Letters • continued

We believe that the ease of installation of the copper tube and a minimum use of fittings is a great advantage for copper tube compared to other materials. How about this?

N.W.M.

The coating of the tubing as explained in your letter will protect the tubing against the possibility of corrosive action from unfavorable soils and provide a safe installation.

If copper tubing is used, protection should be provided where the tubing comes through the floor. It also seems advisable to provide additional protection above the floor line if the tubing is placed where personnel or equipment may bump into it. Furnishings or other equipment which is often moved about in such an area could easily bend, dent or otherwise damage copper tubing where iron pipe would withstand such bumps.—Ed.



Engine conversion technique

Missouri

Information concerning conversion of a 1953 Chrysler "New Yorker" for dual fuel operation to include both liquid petroleum gas and gasoline, is desired.

Specific information is desired as to the amount of planing necessary on the cylinder heads to raise the compression ratio for maximum efficiency from liquid petroleum fuels. Also, how many degrees of advance are required on the distributor for good performance.

H.D.B.

Concerning your 1953 Chrysler "New Yorker," the present compression ratio is supposed to be 7.5 to 1. The compression ratio of all of the large Chrysler V-8 engines for 1957 is 9.25 to 1. If you feel that it is necessary to raise the compression ratio in your conversion, we would suggest that you make the new ratio approximately the same as the 1957 models.

The formula for computing how much to take off and complete instructions are given in chapter XI of the Power Manual. That might require you to plane more than .100 of an inch off the heads which might be more than you could safely cut them. You will have to decide this after removing and in-

specting the heads. This is also discussed in chapter XI.

Just as a matter of personal opinion, if I owned a car of that age and did not expect to keep it for at least four or five years longer, I would leave the heads alone. You can gain nearly as much by blocking the heat passages to the hot spot in the manifold as you can by raising the compression, and this is generally much simpler and less expensive.

Concerning the ignition timing, this can be set by any one of several methods described in the Power Manual beginning on page 154. With the present compression ratio, the distributor advanced curve will be nearly right for propane. If you raise the compression ratio, the present distributor will probably advance a little too fast; and it would be advisable to use slightly stronger springs on the governor weights. I do not have any specification data covering that point so it would be necessary for you to work out your own distributor curve using a chassis dynamometer.

In addition to the chapters noted above, I would suggest that you pay particular attention to chapter X; and be sure that both the engine and the engine's ignition system are in good mechanical condition at the time you make the conversion.—Ed.



Information for foreign distributors

Israel

Kindly let us have the following information.

Private consumers (householders) in this country who want to do their cooking with propane-butane gas have to buy the necessary equipment from the gas-distributing company, and they receive as follows:

2 gas cylinders of 12½ kgs. each, filled with propane gas (mixed with butane gas).

A table cooking range, 2 burners, for cooking purposes only (i.e. without baking oven).

We would be obliged to you for the following information:

1. What is the price of gas for one cylinder, i.e., 12½ kgs. in the United States?
2. What is the price for a cooking range as described above?
3. Does the consumer in the

States also have to buy the gas cylinders or are they leased to him and remain the property of the gas distributing firm?

4. Are there additional initial costs in the States for installation of the equipment at the consumer's home, etc.?

I.E.

Our practices in marketing propane and butane in this country differ considerably from those throughout Europe and the Near East. For example, a table model two-burner range is almost impossible to find in this country. Most domestic ranges have four or more top burners with a built-in oven and broiler. A customer using one of these ranges is quite likely to also have an automatic storage water heater which is supplied from the same gas storage as the range.

Customers who use cylinders for gas storage generally have two cylinders of 100 lb. capacity. These cylinders are owned by the gas dealer and are refilled when necessary by exchanging a full cylinder for one that is empty. The dealers do the delivery, using trucks of 20 to 30 cylinder capacity. The dealer nearly always makes an installation charge for putting in the cylinders and the cylinder holder, and he is paid extra for running the piping or copper tubes into the house and connecting up the appliances. The customer generally owns the appliances, although there is some movement toward rental.

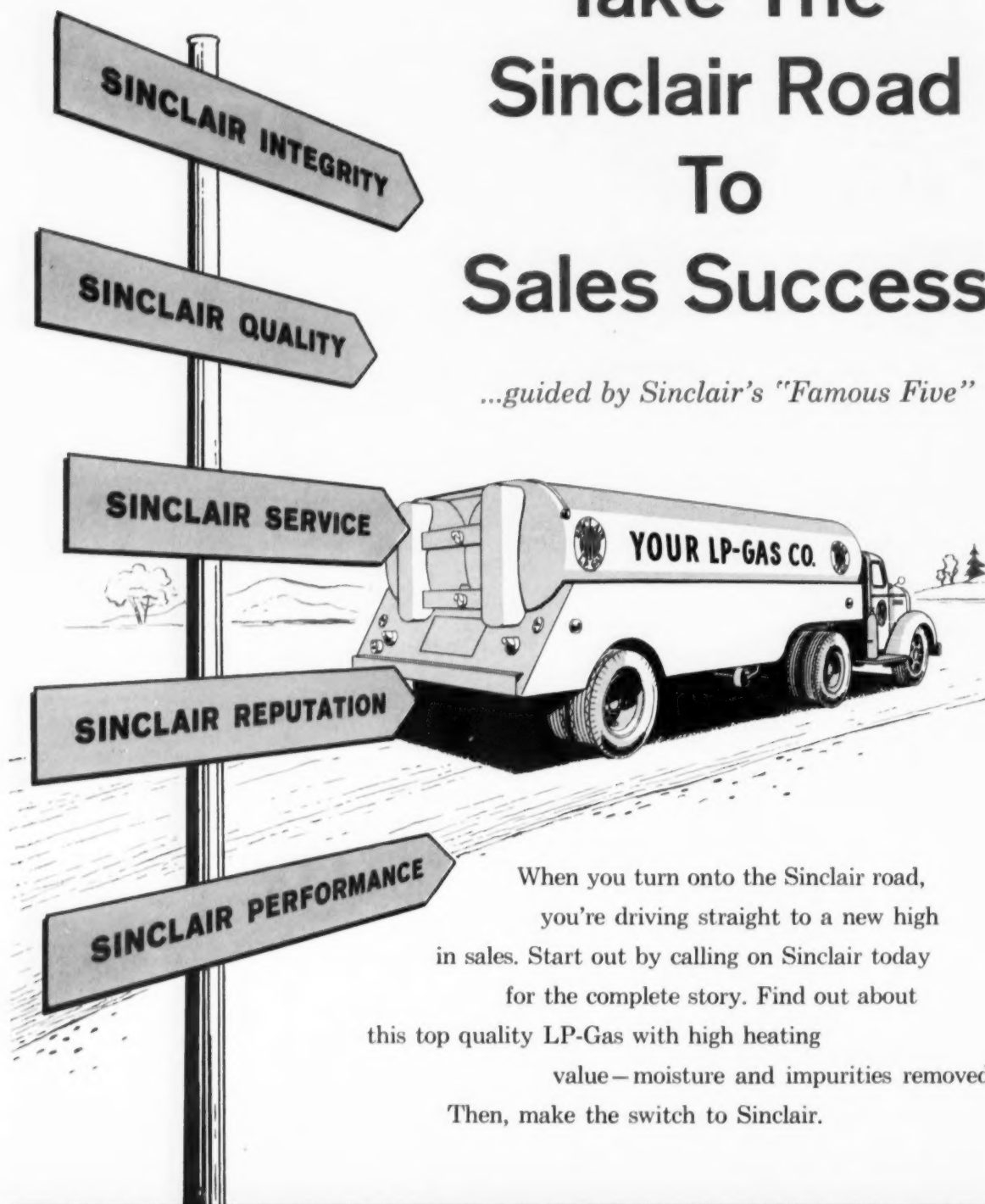
The price of gas in cylinders varies a great deal in different parts of the country depending largely on how far the fuel must be transported from the production plant. The price ranges from about 6 to 18 cents per gallon.

We do not use a great many small cylinders comparable to your 12½ kg. model except in connection with house trailers or summer cottages which are used only a few days at a time. In most cases, the customer generally owns his own cylinder or cylinders and gets his refills from the local dealer.

Our L.P. gas dealers in the United States do a great deal of business by means of bulk truck delivery. Customers using this service have large permanently installed tanks in their yards. These may hold from 250 to 1000 gal. (approximately 110 to 480 kg.). The cost of fuel delivered in bulk is approximately one-half to one-third the price of fuel in cylinders. Many of these customers heat their homes with butane or propane.—Ed.

Take The Sinclair Road To Sales Success

...guided by Sinclair's "Famous Five"



When you turn onto the Sinclair road,
you're driving straight to a new high
in sales. Start out by calling on Sinclair today
for the complete story. Find out about
this top quality LP-Gas with high heating
value—moisture and impurities removed.
Then, make the switch to Sinclair.



Sinclair Oil and Gas Company
Liquefied Petroleum Gas Sales Department
Sinclair Oil Building, Tulsa, Oklahoma

SINCLAIR
A Great Name in Oil



HEADED RIGHT

THE ROCHESTER CRITERION GAUGE NOW HAS A NEW HEAD. This superior new head has the exclusive RMC-removable-dial fully recessed in massive aluminum, and a new angle-view dial face. It's the gauge head you've been wanting . . .

- **MASSIVE ALUMINUM BODY**—to withstand rough handling.
- **RECESSED, REMOVABLE DIAL CHAMBER**—out of harm's way, yet easily removable.
- **ANGLE-VIEW DIAL**—for easier, more accurate readings from any angle.

This superior new head + the outstanding *Criterion* features already proven for unequalled performance = the gauge to specify on your LP-Gas systems—the RMC Criterion.

JR. and SR. MODELS available for mobile tanks with stainless steel cross stud and stainless steel center shaft.



ROCHESTER MANUFACTURING COMPANY
17 ROCKWOOD STREET • ROCHESTER 10, N. Y.

LIQUID LEVEL, TEMPERATURE and PRESSURE INSTRUMENTS

Criterion Gauges are available for prompt shipment from: Gas Equipment Co., Inc., Dallas, Tex. • Gas Equipment Supply Co., Atlanta, Ga. • Gas Equipment Co., Denver, Colo. • Empire Brass Mfg. Co., Ltd., London, Ont., Can. • and the ROCHESTER MANUFACTURING COMPANY, INC., ROCHESTER, N.Y. • West Coast Representative: G. R. Schumann Co., San Francisco, Calif.



EXPAND

YOUR NON-HEATING BUSINESS...

and speed your heating service, too!



Kiker Butane Co. of Oklahoma reports: 30% of volume now used for non-heating purposes

Here's a ready-made market waiting to help smooth out your warm weather dips in gallonage. The amazing maintenance economies resulting from LPG carburetion are winning over new users every day, and progressive distributors are cashing in on motor fuel sales.

But predicted-use records won't work on these customers. You can't forecast when they'll run out of fuel, and when they do run dry—you've got to deliver fast. The *sure* way is with Motorola 2-way radio control of your trucks. Ersa Kiker of Altus, Oklahoma, says, "Our farm motor fuel business is growing fast—but we couldn't service it efficiently without our Motorola 2-way radios."

Radio insures your heating customers aren't kept waiting, either...and gives you a big competitive edge. Mr. Kiker points out that Motorola radio contact saves his delivery trucks many miles of needless traveling. His drivers like radio because now they don't get "stuck" with night calls. With radio in the trucks, they get the late calls and clean up these stops on the way in.

Tractors, trucks, drying kilns, asphalt batching plants—all are potential customers, if you are equipped to give lightning-fast delivery the Motorola 2-way radio way. Motorola radios are available on purchase, time payment, or lease (with or without equity). Get the full story. Write, phone or wire today.

MOTOROLA

2-WAY RADIO

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.
A SUBSIDIARY OF MOTOROLA, INC.
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Motorola consistently supplies more mobile and portable radio than all others combined.
Proof of acceptance, experience and quality.
The only COMPLETE radio communications service—
specialized engineering...product...customer
service...parts...installation...
maintenance...finance...leave.
"The best costs you less—specify Motorola."
.....

Your

BIGGEST

Load

Is

PAYLOAD

...

With *Economy* Blimp Transports



Produced from More Than TWO MILLION TONS of EXPERIENCE

... and that's your guarantee of finest quality, dependability, easier handling, better roadability and greater highway safety when you haul LP-Gas or NH_3 with Economy Blimp Transports. Economy engineers have combined highest tensile steel with years-ahead design to make your BIGGEST load a PAYLOAD — inside the tank — every trip! The 8000 WG Economy Neck-Down Blimp (above) is fabricated from 105,000 tensile steel ... designed to increase your payload potential as much as 500 gallons more over other blimp transports.

GET THE
COMPLETE
Economy Story
OF
EXPERIENCE



EVERYTHING YOU NEED
FOR PROFITABLE OPERATION

... is contained in this new, 24-page story of the Economy pressure vessel line, from the smallest domestic system to the largest transports and storage installations in the world. You'll find equipment for every phase of the LP-Gas and NH_3 industries. Write, wire or phone Dept. J-W, address below.

DALLAS TANK COMPANY, Inc.

P. O. Box 5387

203 West Commerce St.

Dallas, Texas

Phone Riverside 1-5001

Plants in Dallas, Texas, and Vicksburg, Mississippi



YOUR LP-GAS WORRIES ARE OVER . . .

when you're a Tuloma contract customer

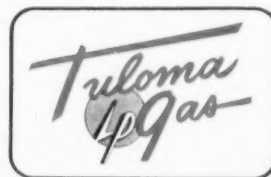
Our Contract Customers always get first call
on these Tuloma facilities and services:

- Strategically located sources of supply*
- Large storage facilities, both above and underground*
- Expert transportation for "on-time" deliveries*
- Personal attention to contract customers' operations*

A Tuloma sales contract—with your signature on the dotted line—will immediately take away all the worry and add more profit to your peak season just around the corner.

Now is the time to contact . . . TULOMA!

Write, wire or call . . .



TULOMA GAS PRODUCTS COMPANY

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beyond the mains



HOW LONG IS AN UNDERGROUND TANK SAFE? Nobody can answer that question for sure. There are still a lot of them in service that should be dug up and junked. Particularly the old thin jobs that were buried years ago when all L. P. gas was butane, and before we knew what we know now about keeping rust from making them thinner. A buried tank should be dug up at least every five years for careful inspection for rusting. And if it will not meet the specifications for propane it should be taken out of LPG service. Replacing tanks is costly, yes, but far less costly than accidents caused by leaking or blowing apart. And both kinds of accidents have happened.

What can be done with the discarded tanks? One of the largest and most careful dealers in Texas cuts them in half and sells them for stock water tanks. A dealer in California reports a lively market for old butane tanks for filter tanks at private swimming pools. If you can not find a market, they make wonderful junk--and they are so much safer after they are cut up for scrap.

EVERY FARMER HAS A WEED PROBLEM. This gives every L. P. gas dealer an opportunity. The farmer's problem costs the nation \$5 billion per year in lost crops. His tools for stopping this loss are cultivation, chemical treatment, and flaming. Flaming is the newest of the three methods, and the most versatile. For the jobs that it can do better, and they are many, it is also the least costly. And most flaming for weeds is done in the months when you need most to increase your gallonage. Deliveries come in the "large economy size." Big weed burning machines use more fuel in a day than the average family does in a year. Even a small hand torch will burn five to ten gal. per hour.

To solve the farmer's problem, you need first to know what it is all about. But you do not need a college degree in either engineering or agriculture to become a good salesman of weed-killing fuel. In this line you can sell more fuel with less training than in any other branch of the business. You can read the fundamentals in BUTANE-PROPANE News. There is an eight page article on field flaming in this issue, and next month we will cover the other weed killing uses. With this knowledge, a hand torch and cylinder of propane, and the desire to learn your own customers' problems, you are in business. You make a few experiments to learn what the flame will do to weeds, then you make spot demonstrations for your customers. Take the magazines with you to show the farmers what the big equipment is like, and what it will do. The key to selling weed control fuel can be stated simply--demonstrate. In no other line that you handle will well staged demonstrations sell so much.

Continued



KENTUCKY ASSOCIATION COMES TO THE RESCUE. The worst flood in local history hit Eastern Kentucky and the bordering parts of West Virginia and Virginia late in January. Thousands of families had to be evacuated. Utilities were out of commission. Hospitals were left without heat or light. Several LPG dealers in the stricken area suffered serious damage from the flood. But almost before the first service was disrupted Frances Holliday, secretary, and Charles Nead, treasurer of the Association, set up disaster communications and began finding and dispatching help for the dealers and communities in the stricken area.

Trucks loaded with filled cylinders, regulators, pigtails, tools and service men began to roll toward the flooded valleys. And not just from the neighboring dealers. One truck came from Owensboro, two thirds of the way across the state. The dealers of Louisville joined in sending a truck, crew and supplies. From a dozen other areas the flood of water brought a flood of help. For those few days there were no competitors in Eastern Kentucky. There were only teams working around the clock to provide warmth, light and the means of cooking food. New and used appliances were set up in relief centers to cover the needs of the temporarily homeless families.

Babies were born by gaslight, hospital nurseries were kept warm with camp stoves, heaters and cylinders substituted for the hospital steam plants, while new patients arrived by boat. When the water went down, the big job of cleaning up and recommissioning gas equipment commenced. The volunteer helpers stayed till the job was done and the local dealers could carry their own load. They reset tanks, installed new cylinder systems to replace those that had washed away, flushed the mud out of appliances and dried out the controls. The men were wet and cold most of the time, missed too many meals, went without sleep until they were ready to drop. It wasn't for pay. There is no way of paying for these services "above and beyond the call of duty."

Out of this disaster has come the Kentucky LPG Disaster Committee. Each of the twelve districts in the state has organized its own branch of that committee, with the district director as its head. They work in close cooperation with Red Cross and the civil defense organizations. Supplies and emergency equipment are kept available. They are ready to take care of their own local emergencies, and can organize on a moment's notice to send help into other areas. It's the old story brought to life--by working together, men can do things for themselves that they can not do by themselves.

Carl Abell

Exclusive *Quaker* features make this wall heater easier to sell!

Quaker's

new "decorator" cool cabinet
vented gas wall heater

Your customers will want this Quaker vented gas wall heater! Completely eliminates unlivable zones now in homes. Simple, easy to install — two wood screws in wall.

*Eye Catching Display
tells the Story Fast—
Makes the Sale!*



Model WCVA-408 — 40,000 BTU. Height: 60" Width: 26" Depth: 6 1/2". Also available Model WCVA-258 — 25,000 BTU. Height: 60" Width: 20" Depth: 7".

Quaker Wall Heaters Have the Features that Sell!

- Hangs on wall like a picture—takes up minimum wall space—installed in three to five minutes.
- Super efficient "deep port" burner with "Half Moon" contour design gives highest burning efficiency.
- Porcelain heating chamber double-coated with lifetime porcelain finish on both sides.
- Super circulation through exclusive "Air-Flow" construction for greater volume of warm air on less gas.
- Super safe extra cool cabinet design keeps walls and heater cool-to-the-touch. No dangerous open flame.
- New decorator styling blends with any room decor. Luxurious Hammer-tone Beige and Gold Silicone finish.

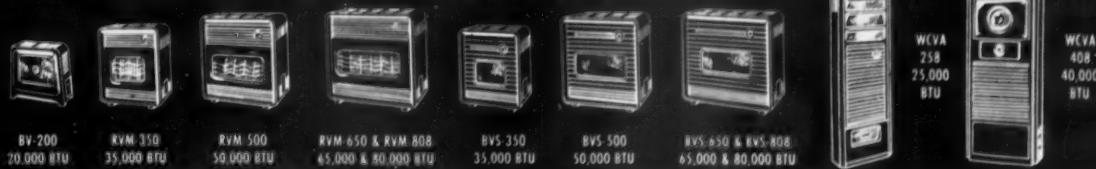


Old fashioned gas heater takes up floor space



New Quaker Gas Wall Heater hangs on wall

THE MOST COMPLETE GAS HEATER LINE IN THE INDUSTRY



Only Quaker Gas Heaters Have 2-Way, 20-Year Guarantee!

1. Double porcelain combustion chamber guaranteed 20 years against rust-out or burn-out.
2. Exclusive "Multi-Heat" deep port burner guaranteed 20 years or replaced without cost.

There's a huge market for Quaker Vented Gas Wall Heaters! Proven local and in-store promotions make quick sales and big profits.

Quaker

MANUFACTURING COMPANY
1147 Merchandise Mart, Chicago 54, Ill.

Mail Coupon for Information and Prices

Quaker Manufacturing Company
1147C Merchandise Mart, Chicago 54, Ill.
Send complete information and prices on Quaker Vented Gas Wall Heaters and other gas heaters in your line.

Company _____
Your Name _____
Address _____
City _____ Zone _____ State _____

EXCHANGE PUMP PLAN

*Eliminates
Shutdowns!*

When a pump begins to lose its efficiency, write, wire, or telephone our factory, giving the *model number* and *serial number* from pump label plate. **NUMBERS ARE IMPORTANT FOR BEST SERVICE!**

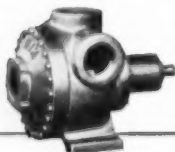
An identical unit in new condition, carrying all the latest factory improvements, will be shipped the same day your order is received.

If the need is urgent, we like to use **AIR FREIGHT**, which costs little more than **RAILWAY EXPRESS**, and far less than **AIR EXPRESS**. For fastest service, arrange to pick up the pump at your nearest airport.

If you can wait a few days, we will ship by **TRUCK FREIGHT**, which is cheapest and is usually delivered to your door. After the new pump is received, you return the old unit in the same crate, cheapest way. The charge amounts to only the cost of repairing your old pump, plus shipping costs.

You can trade in old pumps for larger or smaller units under this plan, as your requirements change.

Exchange pumps usually cost less than half the price of new pumps when the old pump is returned for credit. They are as efficient as new pumps, and last as long since they carry the latest factory improvements.



SIXTEEN BULK-PLANT AND TRUCK PUMP MODELS FOR ALL NORMAL LP-GAS SERVICE. SPECIAL PUMPS BUILT TO ORDER FOR UNUSUAL REQUIREMENTS.

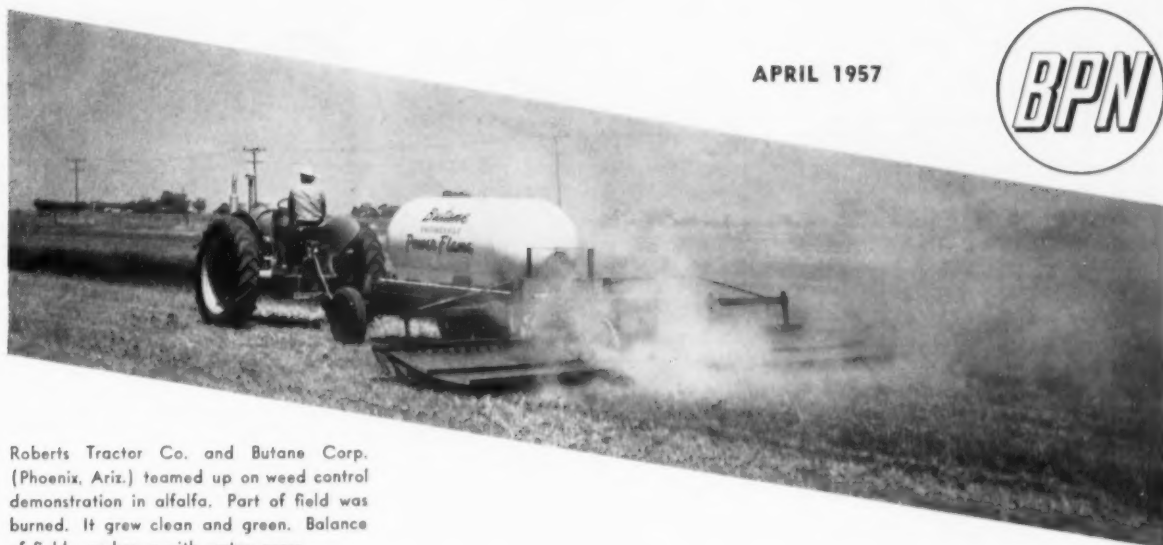
SMITH

PRECISION PRODUCTS COMPANY

1135 MISSION STREET, SOUTH PASADENA, CALIFORNIA • RYan 12293 and RYan 12691



APRIL 1957



Roberts Tractor Co. and Butane Corp. (Phoenix, Ariz.) teamed up on weed control demonstration in alfalfa. Part of field was burned. It grew clean and green. Balance of field was brown with water grass.

Field flaming— fastest growing market for LPG

By CARL ABELL • Editor

THE fastest growing farm market for L. P. gas is in the control of weeds and insects.

From a modest start in the irrigated sections of the West and Southwest about five years ago its use is spreading throughout rural America. Each season the science of flaming is applied to more crops and more conditions. There are already known profitable applications that can be used in any farming area, and we have only begun to understand its usefulness.

The type of agricultural flaming that can be applied most universally is the "field flamer," which covers an entire area, killing weeds and seeds, destroying insects, and stimulating crop plants to renewed and more vigorous growth.

It is not a cure-all, but it is proving to be one of the farmer's most effective weapons in the battle against the billions of dollars of crop losses caused by weeds and insect pests.

An 18-ft weed burner of the "field flaming" type will burn almost as much fuel in a day as the average domestic customer will in a year.

That's right—it takes from 50 to 70 gal. per hour, or from 400 to 560 gal. per eight hour day, to keep that machine running. During its busy season it may work anywhere from 4 to 24 hours per day. Early this spring, Lancaster Gas Co., Lancaster, Calif., supplied fuel for one of these fire-breathing giants on a round-the-clock operation for nearly two weeks. It required four deliveries per day, and consumed from 1200 to 1400 gal. each 24 hours.

Lancaster Gas Co. serves 12 of these big field flaming outfits, mostly working in the control of weeds and insects in the lush alfalfa fields of California's Antelope Valley. Together they consume more than 100,000 gal. per year. During the 1956 dodder season—July, August, September—they consumed over 55,000 gal. It was there that the use of propane as field flaming fuel originated. There are several other machines in the Valley, served by other LPG dealers. It is sizeable business, and as the years go by the alfalfa growers are finding that it pays them to burn the fields more times per year.

The consumption per machine is



Load balancing

Part two

going steadily up. When they first went into action, about five years ago, the burning machines operated principally in the early spring, before the first cutting of alfalfa had commenced its rapid growth. The season was from six to eight weeks, and it came right at the end of the winter heating season. Now it runs through most of the year, with a second sizeable peak in the late summer months. Nearly one third of the weed burning fuel in the Antelope Valley is now burned in August and September.

Alfalfa burning is just one of the many profitable applications that farmers are now making of these voracious machines.

They are now being used to keep annual weeds and insects under control in perennial pastures, golf courses, clover fields, and in the production of onions, garlic, carrots, strawberries and asparagus. Grain farmers are using them to rid their fields of late-seeding annual weeds that would just be replanted and multiplied by plowing the stubble and weeds under. Modifications of this machine are used to kill the tops of potatoes and sugar beets to bring them to uniform maturity and facilitate harvesting by machinery. New uses are being found constantly, and their economic range is covering more of the nation's farming areas every year.

How flaming works

The burners used in field flaming are of the jet type, capable of

throwing a high temperature flame at high velocity. This is directed downward and slightly to the rear, so any flame that is deflected will pass across the area over which the jets have just passed, and away from the machine. The burner is towed across the field at a moderate speed, which varies with the amount of green growth to be burned and with the velocity of the flame.

If treating primarily for young annual weeds, the object is to heat them enough to turn the cell moisture into steam, thus bursting the cells, scalding the plant with its own juices, and destroying the capillaries.

The plant does not need to be charred. With the cell structure badly damaged down to the ground, young annual weeds will dry up and die. Flaming is most effective when the weeds are young, tender, and full of plant juices. Almost any type of annual weed can be killed with a single pass of the machine if it is caught shortly after growth starts. As they become older and the stalks become more woody, control is more difficult. Special treatments for older weeds will be discussed later.

The burning kills the exposed tops of the crop plants along with the weeds, so this type of operation can only be done successfully with types of crops that are capable of recovering from the burning.

This may occur through re-

Golf course was heavily infested with annual weeds. Charred to the ground by burner loaned by Fannin's, Phoenix, weeds

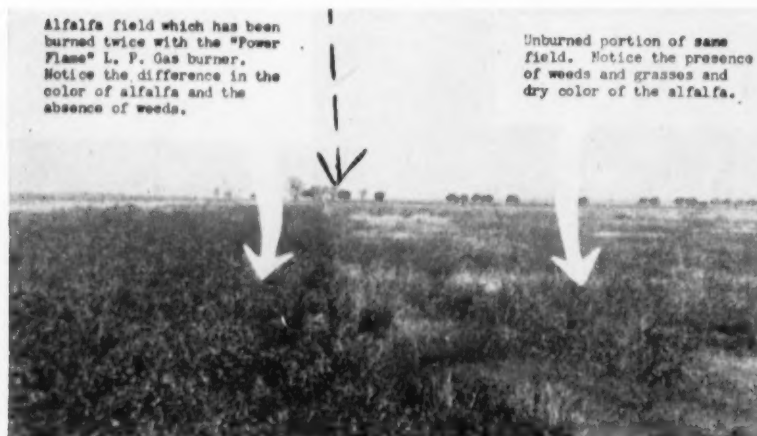
sprouting from the roots, as is the case with alfalfa, clover, perennial grasses, strawberries and asparagus, or from continued growth from the crown or bulb, as happens with carrots, onions, garlic and similar plants. Certain weeds, such as the coarse thistles and most perennials, will also recover from the burning.

It has been found that this burning of the tops stimulates root growth during the recovery period, with the result that growth of new tops is more vigorous, and the end result is improvement of the crop.

This has been particularly noticeable in alfalfa and onions, where tests have shown increases of crop weight ranging from 20 to 25 or more per cent, compared with unburned check plots. Not all of this can be attributed to the physiological effect of the burning on the plant, however. Some of it must be credited to the fact that without the weeds there are more nutrients and moisture available for the plants.

The University of California also calls attention to the fact that in early burning of alfalfa and forage crops the soil surface is darkened by the presence of the charred rubbish. This enables the soil to absorb more of the sun's heat, which in itself results in more favorable early growing conditions.

When burning to kill weed seeds that are still on the stalk or lying on the surface of the soil, more heat is required.



Alfalfa field which has been burned twice with the "Power Flame" L. P. Gas burner. Notice the difference in the color of alfalfa and the absence of weeds.

Unburned portion of same field. Notice the presence of weeds and grasses and dry color of the alfalfa.



disappeared, grass recovered. Cost, \$500—saving 50 per cent, and results better than by any other method.

It takes high temperature to kill the germ of the average tough-coated weed seed. But there are other conditions that can cause the death of seeds. If the cover is burned through, the interior portions will generally decay. Or if the cover can be ruptured by the vaporization of oils or moisture contained inside the seed, a little weathering will generally kill it. Thus, timing of the burn becomes important. Many seeds can be exploded almost like popcorn if they can be quickly heated so the internal pressure bursts through the covering. This is more easily accomplished if the burning takes place while the seeds still contain a lot of moisture and while the coatings are still tender.

Any insects that can be caught in the flame are also killed. The heat chars the legs and wings, even though in some really tough species they may not be killed at once.

Best conditions for burning

Burning is generally done primarily for control of weeds, with insect control of secondary importance. The presence of dew or surface moisture following a rain does not help to kill the weeds. The cooling effect from evaporation of the moisture offsets quite a lot of the heat of the flame, and in dense low growth such as chickweed it becomes very difficult for the heat to penetrate to the soil surface. Such plants must be killed all the way to the ground, or they will grow again from the living portions.

It is better and more economi-

cal practice to do the burning only when there is no surface moisture present. This not only improves the kill, but also does the job with less fuel. Any non-flying insects that are present in the field will be killed with the weeds. Flying insects such as cabbage butterflies or grasshoppers will frequently escape if the burning takes place during the warm part of the day. Where a part of the problem is to rid the fields of these flying insects, it is more effective to burn as early in the day as possible, while they are still sluggish from the cold.

Spotted aphids in alfalfa

During the past three years the spotted aphid has become the most serious insect pest in the alfalfa fields. It has spread like an epidemic through most of the growing areas west of the Mississippi

sets in. The combination of early flaming and summer ladybug culture seemed to offer a good solution, and then nature stepped in with a completely unexpected assist. Three varieties of fungi began to attack the aphids, and under favorable conditions for their spread the control was very effective. These favorable conditions are warm weather and moist atmosphere. Frequent surface irrigation helps, but overhead sprinkling is far more effective. Rain or merely damp weather are ideal. For most effective early control, burning about the time growth starts—and again after the first cutting—prevent the extensive spread of the aphids until the fungi can get in their deadly work during the summer. The aphids will probably be with us for a long time—perhaps from now on—because they can winter in un-



Eighteen ft burner assembly of Power Flame field flamer folds for easy transportation between jobs.

River. Some hope was held during the early days of this pestilence that flaming could provide an effective control. It is true that the aphids in the treated areas were killed, but it was not possible to prevent them from flying or blowing in from neighboring infested plants.

It was possible in many cases to prevent total infestation of fields by burning the stubble following each early cutting, and thus the marketable crop was increased.

The state agricultural experiment stations set to work to develop biological means of controlling these pests, and made some progress through the distribution of ladybug beetles. These insects eat several times their own weight of aphids in a day, but they do not become active until warm weather

treated areas and on other plants. Cultures of the fungi are now available, but even when they are present in every field there will still be the need for early burning, not only to hold down the aphids but also to control the weeds.

Weed control in alfalfa

There are a number of early-growing weeds that infest alfalfa fields.

If allowed to grow, some of them—like mustard and radishes—overshadow the young alfalfa shoots and check their growth. Others, like fox-tail grass, make dense mats on the surface, and tend to choke out the crop. These weeds are harvested with the alfalfa, and not only reduce the



Agriquip field flamer carries oven behind burners to prolong heating period and facilitate use on windy days.

RESULTS OF STUBBLE TREATMENT ON CONTROL OF DODDER IN ALFALFA

(Agricultural Equipment Corp., in cooperation with Weed Investigation Section, Agronomy Department, University of Wyoming. Treatments applied June 22.)

Treatment	No. of dodder patches per plot, Aug. 4	Results	
		Yield, lb of seed per acre	
		Alfalfa	Dodder
WHC oil-water emulsion 120 gal. per acre	17	28	133
DN-fortified fuel oil-water emulsion 120 gal. per acre	13	58	110
Stubble burning—light (1 min./sq. rd.)	9	80	26
Stubble burning—medium (2 min./sq. rd.)	5	130	17
Stubble burning—severe (3 min./sq. rd.)	5	130	18
DN-fortified Hydrin-water emulsion, 120 gal. per acre	15	66	76
WHC oil-water emulsion plus CIPA 6 lb. per acre	10	101	53
Untreated check	53	10	172

crop but also lower the market value of the hay.

Early burning, when these weeds are just starting to grow, provides almost complete control.

The heavier crop and the higher price per ton for the hay generally show a handsome profit over the cost of flaming.

There are also other weeds that become serious pests later in the season.

Plants like the parakeet weed of the Southwest sprout too late in the spring to be caught in the early burning. Their tops are cut off in the first harvest, and they sprout from the stumps, producing dense heads with many seeds. These are particularly bad in seed alfalfa, as they are hard to separate from the alfalfa seeds, some-

times disqualifying the seed for planting and forcing the growers to sell them for other purposes at low prices. Burning the fields after cutting gets rid of these weeds.

Dodder is a serious pest in the irrigated western fields.

This is a parasitic plant that grows from seed. The seeds sprout in the ground, but the plants draw their nourishment from the alfalfa through stub roots that penetrate through the bark of the alfalfa stalks. The dodder seeds will live in the soil for as much as ten years, or until favorable sprouting conditions occur.

Germination requires heat, sunlight, water and good circulation of air. These conditions can oc-

cur on the dikes in irrigated fields, or in bare spots. The persistence of dodder makes its control a constant year-by-year market for control products. One good burning after the first or second crop is cut will give good general control, but spot treatment of persisting growth is nearly always needed. This spot treatment can be given with a hand burner. Chemical control of dodder has not been nearly as effective as burning. The accompanying table is a report of controlled tests conducted by F. L. Timmons of USDA at the University of Wyoming. The "medium" stubble burning consumed fuel at the rate of about 15 gal. per acre. In view of the increased alfalfa seed production, this is probably the biggest bargain that can be bought for the control of weeds.

Other advantages from flaming alfalfa have also been experienced.

In the desert areas where year-round irrigation is practiced and is mostly done by surface flooding, the burning of the rubbish in the field permits the water to travel faster across the surface. This results in a considerable saving in water cost. It has also been noticed that in unburned fields much of this rubbish floats down to the low end of the "check," where it accumulates in masses that smother the plants at that end. Burning the rubbish eliminates this condition, and thus provides a greater net crop area.

If allowed to grow unchecked, weeds will gradually smother out an alfalfa field. While flaming will not restore the plants that have died, there are many cases on record in which the invigorating effect of the flaming on the alfalfa plants, plus the control of weeds, have justified the continued cropping of fields that would otherwise need to be plowed up

Nemesis for weed seeds in wheat stubble. Field area at right has been burned. This



and replanted. We do not know how many years longer a field will last as an economic producer if it is kept weed-free by flaming from the time it is young, but it is generally believed that its life will be at least three years longer.

There has been a widespread belief that alfalfa plantings should not be flamed during their first year. Several fields in Kern County, Calif., have been subjected to midsummer burning during their first year without harm to the alfalfa and with most beneficial results in killing weeds. In the Antelope Valley there are fields that were badly overrun with sand burrs while planted to milo, that were prepared for alfalfa planting. After plowing, the sand burrs sprouted so thickly that it looked like these pests would be the principal crop. Three hard burns killed them out so thoroughly that the alfalfa, when planted, came up clean. Other badly infested fields have been subjected to a hard, slow burn before plowing, and have shown equally good results.

Sam Flint, of Dust-R-Spray Co., Holly, Colo., in reporting on a series of weed control tests in seed alfalfa published the following statement:

"Field No. 3—This field was burned with a butane burner. A portion was burned light, a portion burned medium, and a portion was burned heavy. The light and medium stopped all weed growth present but did not control the weed seed on the ground. The heavy burning stopped all weed and grass growth for the length of the seed crop. As an estimate, the heavy burning used about \$1.50 per acre of butane and the light burning about one-half that amount. This heavy burning proved to be the most economical and best all around control. This had no effect on the regrowth of the alfalfa."

Heberlein burner covers twice the normal swath.

Other forage crops and pastures

While there has been a great deal more experience with alfalfa than with other forage crops, there have been a number of reports indicating that flaming will have great value in the control of annual weeds in fields of perennial forage crops. This is particularly true in raising these crops for seed. Ladino clover seed fields in Oregon have been greatly benefited by burning. Limited experiments have been carried on in other areas, on which we hope to have reports in the near future.

The irrigated permanent pastures of the West and Southwest sometimes become badly infested with weeds that can be controlled by flaming. These include cockleburrs and various types of thistles. If widespread, the field flaming machine may be needed. Ordinarily these weeds grow in patches, and may be easily controlled by local burning with a hand torch, if the treatment is given early enough in their period of growth.

Early treatment is essential in the case of the bull thistles and Canada thistles, as flame alone will not kill these plants after they reach the stage where the leaves become meaty and are large enough to protect the crown buds from the direct flame. While not too much is known about the pasture problem, it would seem logical that an overall burn just after the majority of the annual weeds sprout would have the same effect that it does on alfalfa fields—clean out the weeds and stimulate the growth of the pasture plants.

Strawberries

Up and down the Pacific Coast, strawberry fields are being burned about the time growth starts in the spring for the control of the cyclamen mite, which is the principal insect pest that attacks that crop. Burning has extensively replaced the less effective and more expensive method of cutting the tops off at ground level, taking them out of the fields and burning in an incinerator. The flaming makes a more complete kill of the insects, stimulates multiple growth from the crowns and heavier production, and kills the

early weeds at the same time. The cost of burning is only a small fraction of the cost of the hand operations.

Since the cyclamen mite lives in several other host plants, some of which are weeds and may grow wild almost anywhere, the fields become reinfested during the season and must have the treatment repeated each year. In some of the growing areas where the summers get really hot, with resultant short producing seasons, a few of the growers have adopted the practice of reburning about the first week in September. This is followed by a heavy irrigation, which causes a heavy growth of the plants and the production of a small crop of fall berries.

It has been found that strawberry fields may be maintained in profitable production for an extra year as the result of the flaming practice. This is important to the growers, as the cost of planting new fields is high, and they do not get into full production until the second year. Cyclamen mites are widely distributed throughout the United States, and are a serious pest in many of the eastern strawberry areas.

Asparagus

Asparagus fields can not be satisfactorily weeded with tools during the crop season, on account of the extensive damage that results to the young shoots that are just under the surface. A light burning, repeated if necessary, will keep the beds weed-free during the harvest season, after which few weeds will grow due to the dense shading of the ground by the stalks that are allowed to mature.

Onions

Flaming of onion crops is now widely practiced. The burning serves two purposes—control of onion thrips, which can not be satisfactorily treated with chemicals, and clearing the rows of weeds. Burning takes place after the young onions have grown to the size of a small pencil. Everything in the field is then burned right to the ground. The thrips and weeds are killed. The onions recover by the process already described—





Burning saved Jack Gill's 80 acre onion field from weeds.



A two-row adjustable strawberry burner.

first the roots multiply rapidly, then they send additional nutrients into the production of a new top. This grows with greater vigor, and is able to produce a larger and more perfect bulb. Growers who have followed this practice for several seasons report an average increase of about 20 per cent in tonnage, a better price on account of higher market grading, and a lower percentage of bulbs that must be culled out because the plants produced seed spikes.

A case in which a badly weed-grown onion field was salvaged by burning is reported by the Bakersfield office of Petrolane Gas Service. The owner, Jack Sill, was going to plow up the entire 80 acre field because the cost of hand weeding would have been prohibitive. Petrolane's Bud Bradley persuaded him to permit a small-scale test with a hand torch. The results were so good that Mr. Sill went over the field twice with an alfalfa burner. Fuel consumption was 2215 gal. Production was 60,000 sacks—a little less than normal because the heavy weed growth had choked out many of the onions. The onions graded unusually high and he caught a good market, with prices above \$1.25 per sack. Hand weeding to save the crop would have made the operation unprofitable, and plowing up the onions would have resulted in a large loss.

Carrots and root vegetables

Carrots may be successfully weeded with flame if burned after the central roots start to thicken. Fields that have been so choked with weeds that the crop seemed

lost have been saved and brought to profitable production by overall burning that killed the weeds and destroyed the foliage of the carrots. Within two weeks the carrots sent up new leaves, and growth became normal.

Other root vegetables such as turnips and beets, in which the bulbous growths are partly above ground, may be flamed successfully, but they require careful timing. If burned before the roots can withstand the shock, a high percentage of the plants will be killed. If flaming is delayed until the roots begin to swell above the ground, surface damage may occur. Irrigated sugar beets can be successfully flame-weeded if water is available for application shortly after burning takes place. Results have not been good during periods of water shortage when there was insufficient soil moisture to provide rapid regrowth.

Hybrid seed corn

Production of hybrid seed corn presents a special problem. In some specially desirable crosses, the male or the female strain may reach sexual maturity earlier than the other parent strain. Past practice has been to delay maturity of the earlier strain by mowing off part of the plant. This does not provide any control of weeds in the plant rows, so it is strictly an extra operation.

It has been found that passing a flaming machine over these rows when the corn plants have only four or five leaves, slows down maturity about three or four days, and also kills most of the young weeds. To get a week's delay in maturity, the rows are burned

again after growth is resumed. In this way, propane is being used to regulate the sex life of hybrid corn. The burners are set directly above the rows, and pointed down and slightly backward. Special machines have been built for this work, with burner bars mounted on the rear of tractors. The flame covers only the plant rows, as the intervening spaces will be kept weed-free by the regular cultivation processes.

Pre-emergence burning

With a great many row crops the germination of the plant seeds is so slow that many of the annual weeds start to grow before the crops come up. Flaming above the crop rows just before the desirable plants break through the surface results in killing the weeds without harming the plants. This is a particularly good practice with tender-stalked plants like beans, on which selective flame cultivation must be delayed until considerable growth has taken place. The results are equally good in corn, sugar beets and some other crops in which the weeds normally come up first.

Clearing late weeds from grain land

Many wheat, oats and barley fields become badly infested with late weeds which do most of their growing and mature their seeds after the grain has been harvested. Where these crops can be rotated with cultivated plants, these infestations can be kept under control by the regular farming practices. Several of our great grain belts do not have sufficient

rainfall to permit such rotation—grain is planted year after year.

If weed control is attempted by early plowing, before the weed seeds mature, the soil will be subject to blowing. If plowing is delayed until planting season to minimize blowing, the seeds will mature and the next weed crop will be much worse. Setting fire to the stubble and letting it burn across the field results in partial kill of weeds, but seldom kills any seeds that may have matured and dropped.

A kill burn in badly infested fields, using enough flame to kill the seeds, will go farther toward cleaning up the weeds than any of the other processes. Not enough is yet known about the most effective techniques, nor about the degree of weed infestation that will justify the expense of using the burning machine. This is something on which we hope to present more complete data within the next two or three years.

Harvesting potatoes and sugar beets

One of the problems in harvesting potatoes is related to the tendency of the different plants to mature at different times. The potatoes should ideally be harvested a few days after the plants wilt to the ground. During these few days the skins toughen, so they are subject to less damage in digging and handling. They should be dug as soon as they reach the proper stage of maturity.

In every field there are always some spots and numerous individual plants that are still green when the earliest plants reach

maturity. The potatoes on these green plants have delicate skins, and the bulky plants tend to clog the digging machines. Both of these conditions can be overcome by flaming. The burning kills the tops and causes quick maturity of the potatoes. By the time they are ready to dig, the tops have shrunk and become brittle enough that clogging of the harvester seldom occurs.

The grower profits because the digging can be done in less time and the loss or down-grading of potatoes due to tender skin conditions is reduced.

Mechanical harvesting of sugar beets can also be greatly aided by a flaming treatment that kills the tops. The tops are burned a few days before the harvester is put in the field. When they are wilted and dried they do not obstruct the action of the digger, and they do not need to be cut off. There is considerable saving for the grower, as the tops would otherwise have to be cut off, with the loss of some of the beet. Labor cost of harvesting is also reduced.

Field flaming equipment

Field flaming equipment ranges all the way from big tractor-drawn units burning as much as 70 gal. per hour down to single hand operated torches utilizing cylinders for fuel supply. They all have their places in the weed control picture.

The big mechanized units cover up to a 25 ft swath, and are supplied from 500 gal. tanks.

There is a pronounced trend toward the use of "hovers" to con-

fine the heat behind the burners and thus intensify the treatment and conserve fuel. Covering the flame also helps to keep the burned gases out of the burner inlets, which is an advantage in operating on windy days. With the flame completely enclosed it is possible to work in any direction in relation to the wind, whereas working ahead of the wind tends to snuff out the burners without this protection.

The big burning machines are most useful in connection with non-cultivated crops.

They have been used to some extent in bedded or row crops such as strawberries and asparagus, but for most cultivated crop applications they are somewhat wasteful. Special smaller machines have been built for these applications, designed to confine the heat to the immediate crop areas. They differ from the "flame cultivator" type of machine in that the burners are mounted to throw their flames down on the crop areas, burning everything, instead of having sidemounted burners designed to throw the flames across the rows, as is necessary in selective burning to kill weeds and save crops.

A recent development for non-selective burning in row crops is a set of burners designed to be mounted on the tool bar of a tractor.

These may be adjusted to give a concentrated flame directly over the plant rows, or grouped to cover the wider beds used for strawberries and asparagus. The

Ken Kennepohl, Lancaster Gas Co., demonstrates effectiveness of hand burner at night—a good way to dramatize sales talk.



Bindweed (morning glory) can be killed in fencerows at rate of more than 2 mi per hr with hand burner. Agriquip burner in use.



fuel supply tank is mounted either on the front or back of the tractor.

The single hand burner may be operated from any convenient fuel supply.

It is used primarily for spot treatment, and the smaller plots in which a machine can not be handled conveniently. These burners are available with tanks up to 250 gal. mounted on trailers, and also without tanks. Some farmers connect them to the vapor outlets of tractor tanks, or to tanks of LPG-equipped pickups. They can also be used with domestic cylinders, or even with trailer bottles or small back-pack cylinders such as are used by the forest service. When used with these small

Non-selective field flaming is one of the best ways to increase summer gallonage, and with the range of equipment now available and the growing knowledge of its practical application, it offers the opportunity to develop profitable load balancing markets in every agricultural area.

Sell or rent the machines

The LPG dealer's program to get the field flaming machines into use will be based on conditions in his own territory.

Any large farmer producing crops that will be benefited by flaming is a logical prospect for the sale of a machine. Where several hundred acres are involved, there is no question but that he should own his own flaming equipment so it will be available whenever he may need to use it. Some farmers with smaller acreages can profitably own a machine, augmenting their income by doing custom work or renting the machine to neighbors. There are also a great many agricultural service contractors scattered around the country who specialize in pest control work and custom-fertilizing. Flaming machines broaden their scope and give them an added source of profits.

In starting out on a flaming program, the LPG dealer will need to do a certain amount of demonstration work and have equipment available for trial use or rental.

The most successful dealers have had at least one of the tractor-drawn machines most suitable for the farming conditions in his territory, and one or more hand burners with which a quick demonstration can be made. The burner and a cylinder can be carried on a pickup or in a car, or it can be connected to the vehicle tank if the vehicle is equipped with propane carburetion. Demonstrations should be made at every opportunity, and these with the big machine should be planned to include as many prospective users as possible. It will also be very advantageous to have the county agent at the demonstration.

Renting machines presents cer-

tain problems of customer satisfaction.

A flat fee, such as \$10 or \$15 per day, is not too acceptable to the customer, as weather conditions may make it impossible to use the machine for the full day. Many dealers who have been renting machines for two or three years have settled on the basis of adding a little extra to the price of the fuel in lieu of daily rental. Two cents per gallon extra works out about right. Where the use of the machine is promoted actively, its purchase price comes back to the dealer in approximately one year, and the profit on the fuel is a nice increase in the "net."

A nice additional gain can also be made by having several of the single burner outfits with trailer mounted tanks available for rent to smaller farmers or those not needing the big machines.

Lancaster Gas Co. has several of these units spotted out in the trade territory on a profit-sharing deal that pays both parties. These are placed with local farm co-ops, country stores, or leading farmers, for rent to users at \$5 per day. The person in charge of the machine makes the rental arrangements with customers and relays the fuel orders, for a 50-50 split of the rental fee. This is a nice sideline profit for him, and pays off the cost of the machine in a few months. The amount of fuel that can be sold through this arrangement is surprising.

Conclusion

Flaming provides LPG dealers with a new and growing market which seems to have no limit. Studies being carried on continue to open new fields. The dealer who can step in and build a good farm flaming program has a bright future in store—an ever-increasing heavy load per customer with peak demand during the spring and summer months and no competition from other fuels. For the LPG dealer who is used to battling long routes with small fuel drops, winter-summer ratio problems and electric-oil competition, agricultural flaming holds the promise of paradise. ■



Rental unit with single hand burner ready for service.

containers, the burning must be intermittent to allow time for atmospheric heat to offset the refrigerating effect in the container.

For small operations that are beyond the vaporizing capacity of a single domestic cylinder, multiple cylinder operation is practical. Lancaster Gas Co. has developed a simple solution for the problem of carrying the multiple cylinders. They drill holes in the base flanges and bolt two or more together to prevent rotation, then fasten the upper parts of the cylinders together with steel straps. The outlet valves are then equipped with bent tubes connecting with the vapor space when the groups of cylinders are laid down in a pickup. The valves are connected to a single regulator, from which the hose goes to the burner.

THE EASTERN KENTUCKY FLOOD

A report on dealer courage and cooperation

AFTER four days of torrential rains which soaked eastern Kentucky, the Cumberland, Big Sandy, and Kentucky Rivers could finally hold no more. They overflowed their banks and sent flood waters raging through the Eastern Kentucky valleys. The resulting scene was one of tragedy and despair.

The toll was high. A total of 426 homes were destroyed, 1046 had major damage and 7943 suffered minor damage. Emergency relief of some type was required by 27,665 persons. Power failed. Hospitals were darkened.

And shining like a bright light through that dismal scene were the L. P. gas dealers of Kentucky sparked by their association, the Kentucky LPGA.

Sixteen LPG dealers were in the flooded area and all had customers hard hit by the raging waters. Six of the dealers suffered damage to their own property. But with damage to their own plants running in the thousands of dollars and with cylinders and tanks by the hundreds floating away, the eastern Kentucky dealers set out to restore the much-needed gas service. Their first thoughts were of their customers.

Had they been alone, the task might have been an impossible one. But they were not alone.



The new home of Mr. and Mrs. James A. Lewis, LP Gas Co., Cumberland, Ky., stands in the rising flood waters. Storage tank is a supplementary facility and could not be reached.

When news of the flood reached Frances Holliday, secretary of the Kentucky LPGA, she was in the midst of a formal showing of a new L. P. gas kitchen the association had on display at the University of Kentucky's annual Farm and Home Week. With her were Mrs. Ruth D. Greene, Kentucky LPGA vice-president; Howard Yandell, finance chairman; and Charles Nead, treasurer. The four association officers held an emergency meeting to decide how they might help dealers in the stricken area.

Mrs. Greene rushed to her dealership, Midwest Bottled Gas Distributors, Highland Heights,

to send a tank truck loaded with LPG to Rolane Gas Co., which was in the flooded area. Mr. Yandell who owns the LP Supply Co., Owensboro, was sent on a flying trip to his supply house, some 250 miles away, to get enough regulators, fittings, cylinders and other equipment to load a truck for Rolane Gas Co.

Then Miss Holliday and Mr. Nead hurried to Kentucky LPGA headquarters in Burnside to begin trying to contact flooded dealers by telephone and radio to find out exactly what help they needed.

"As I talked to the various flooded members on the telephone,



These "before and after" photos of the Eastern Kentucky flood show a bulk tank that was not washed away. Tanks had to be reset,



new hookups had to be made and appliances had to be cleaned of mud before gas service could be restored.

A pig was found atop the filing cabinets of the Kentucky Power Co. office. Electric transformers exploded when water hit them, cutting off all electric power.



the thing that impressed me most was their courage—and how tired they were,” Miss Holliday reported. “I didn’t get any calls through for a couple of days, and by then they had lost sleep, had waded through mud and water, and were so exhausted they hardly knew what they wanted. Yet, they were out helping others to have heat for warmth and cooking.

“Then I shall always remember the relief that came into their voices when I could call them back and say: ‘Help is on the way.’” she added.

And help was on the way. It came from Owensboro, more than 200 miles away, as Mr. Yandell drove all night with a truck load of regulators, copper tubing, pig-tails, fittings and cylinders. From Cumberland Natural Gas Co., Burnside, came two service men, John Childers and Merrill Richardson. They drove a 1½ ton truck with 25 cylinders. Jack Munford, serviceman from E’town Propane Inc., Elizabethtown, was sent by E’town’s owner Gene McDonald.

Cylinders sent to Rolane Gas Co. were empties so that owner Elmer B. Roll, president of the Kentucky association, could unload a transport sent in by Phillips Petroleum Corp. and Liquid Transporters. This gas, together with a tank truck lent by The LP Gas Co., Cumberland, owned by James A. Lewis, gave enough assistance so that Rolane could go back into operation.

Meanwhile, Olson Bottled Gas, Louisville, owned by Orville Olson Sr. and Jr., sent its service truck, loaded with equipment from LPG dealers in the Louis-

ville area, to Darch Hardware Co., Beattyville.

Offers of help poured into the Kentucky LPGA office. All emergency gas and equipment was routed by the association office. As an association office, offering emergency aid, the Kentucky LPGA was able to get calls through and acted as a clearing house for all members.

Except for extreme cases, all service was restored in three to four days to customers who still had homes. In some cases, boats had to be used, but the L. P. gas men got through.

A serviceman tells his experiences

ONE of the many trucks sent by Kentucky LPGA dealers to help the flooded Rolane Gas Co., Hazard, carried Cumberland Natural Gas Co. servicemen Merrill Richardson and John Childers. Here, in his own words, is serviceman Richardson’s report on his activities.

We left Burnside on a Saturday morning for Hazard to help restore L. P. gas service. We reported to Mr. Elmer Roll of the Rolane Gas Co. There sure was a smile on his face when we introduced ourselves.

So we started the task of restoring service. We waded in mud to our knees in some places. We cleaned ranges and furnaces of muck and mud. At one point, John and a serviceman from another company said “we’ll get this customer around the bend.” When they got there, the house

Rolane Gas Co. was one of the hardest hit. One hundred gas-filled cylinders were lost and about 100 2-cylinder installations were damaged. Twenty bulk tanks had to be reset and piped. Yet, by Tuesday, February 5, all customers with homes had gas service.

By Wednesday noon, the day after the flood, Rolane had emergency kitchens using bottled gas set up in the VFW club, two churches, and in the supply room of the Kentucky Power Co., whose transformers had exploded.

Darch Hardware & Lumber Co. had 100 cylinders washed off its loading dock and down the river. And \$6000 worth of equipment and appliances were lost. But with the help of Olson Bottle Gas, service to customers was restored in short order.

Eighty customers of Manchester Sales & Service, Manchester, lost their cylinders. Although replacements had to be delivered by boat and wagon in some cases, all were in place by the third day after the flood. Manchester also made 25 LPG installations in homes where electrically control-

was gone. Nothing was left on the premises but a lawnmower and an old grate.

Some of the people had wired their cylinders to a pole or their house so those cylinders didn’t wash away. But we had to carry cylinders up hillsides and across swinging bridges to other customers. Some of the bulk tanks were turned over and we had to reset them.

We ate and slept at Mr. Roll’s place. We had plenty to eat and a good place to sleep. Mr. Roll had four folding beds in one room and two in another. Six men stayed the first night.

John and I stayed for four days helping with installations. It was hard work and we put in long hours, but we were more than repaid by the smile on Mr. Roll’s face and by Mrs. Roll’s fabulous cooking. ■

led natural gas and coal furnaces were out of operation. LPG ranges and installations were supplied to three electrically-equipped restaurants. And L. P. gas heat was installed in the Manchester City Water Works plant to keep the purification equipment from freezing while the natural gas lines were out.

A \$12,000 loss was suffered by The LP Gas Co., Cumberland. By Wednesday evening, however, the night after the flood, all customers affected had gas service. Owner Lewis' service men, Howard Sturgill and Alfred Mullins, worked waist-deep in water salvaging cylinders and equipment.

As a result of the flood experience, association officers are planning to establish a regular disaster service. Miss Holliday would like the association to acquire a portable flood light, an infra-red heater, and a portable hot plate, all operating on LPG. She then wants to use these in talks to a series of district meetings to show Civil Defense, the Red Cross and city officials across the state, exactly what the association can offer in the way of emergency service.

A state disaster committee has been planned by Miss Holliday and President Roll. Each director of the association will be an ex-officio member of the committee and will select a district committee of at least five members. Each association member will be asked to pledge to keep certain items on hand for emergencies. This would include extra equipment, cylinders, ranges, heaters and similar necessary items. Then, in an emergency of any kind, the association office would know immediately what members to route to other areas for emergency service.

The quick action and unselfish cooperation of the Kentucky dealers in aiding each other to aid their customers not only raised the prestige of the dealers in the sight of the public, it won the association another member. When one stricken dealer in the flood area saw the assistance given members by the association during the flood, he joined up immediately afterward. ■

Hospital asks LPG dealer for help, light and heat rushed by rowboat

AS flood waters began to enter the business district of Paintsville, during the eastern Kentucky flood in late January, Charles C. Wells managed to work his way back to the Hardware Charlie Gas Co. operated by himself and his family. As he was checking his store, two civil defense officials came up by boat to tell him that flood waters had covered the heating and lighting facilities at the Paintsville Hospital. There were labor cases, seriously ill people, and an incubator baby. The hospital was cold and dark. Could Mr. Wells do anything about it?

Charlie Wells, 23, took quick stock. He had three LPG camp stoves, with small cylinder attached, and one portable LPG light. These were loaded into the boat and the three men rowed to the hospital.

At the hospital, Mr. Wells set up the portable light in the delivery room. One of the stoves was set up near the incubator baby in the nursery while the second was set up in the nursery to heat the babies' formulas and sterilize bottles. The third stove was placed in the children's ward for heat.

It was then 2 a. m. and the hospital was really getting cold. Some way had to be found to heat the building and to warm



Charles C. Wells

food. The only possible way to provide these necessities was to use cylinders inside the building. Mr. Wells conferred with Dr. Paul Hall and the civil defense officials and the men decided that in a case like this, lives were more important than LPG regulations.

The doctor was sent by boat to Mr. Wells' grandfather's warehouse (a wholesale hardware company) to get several Btu LPG circulating heaters. Mr. Wells went back to his store where a cylinder truck was parked with eight cylinders of LPG.

As the doctor brought one heater at a time by boat to the hospital, Mr. Wells rowed one cylinder at a time to the same place in another boat. When they were finished, six heaters were operating in the halls of the hospital.

Mr. Wells had two hot plates in stock. These were connected in an empty room for preparation of food.

Servicemen guarded the cylinders at all times. Hospital personnel were instructed as to proper precautions to take with cylinders inside of a building.

The portable light in the delivery room was used for five nights and six babies were born by its bright beam. The hot plates prepared coffee and oats for hospital patients and personnel for the four days the building was isolated.

Much misery and suffering was prevented and several lives were saved thanks to Charlie Wells and L. P. gas. ■



A Kentucky LPGA service school was held two weeks after the flood in a once-flooded area. Association Secretary Frances Holliday, who did so much to organize dealer aid teams, sits at desk in foreground.

Need a loan?

Uncle Sam might fix you up

Every time Small Business Administration loans are mentioned in BPN's Washington Report, the editors get letters from dealers who want more information. To answer these many requests, BPN contacted the Small Business Administration and asked all of the questions an L. P. gas dealer might ask. Here are the answers.

By MARTIN A. BROWER • Associate Editor

WHAT would you do if you could lay your hands on some ready cash right now? Would you buy some more customer tanks, cylinders, meters, appliances and equipment? Maybe you would modernize and expand operations with some new rolling stock, a two-way radio system, another bulk storage tank or some new pumps and compressors. Or would you just hang on to the money for working capital so you can buy up some gas, add a man to the payroll or do some more advertising?

Any way you look at it, money is nice to have. If properly used, money can make you more money. Unless you have a rich uncle or win a jackpot on a TV quiz program, though, no one is going to hand you any sizable amounts of the green stuff. So if you want some money right now, you will have to get a loan.

But a good loan is hard to get. Getting a medium or long-term loan at decent terms has always been a problem for smaller LPG dealers and is especially difficult in these days of "tight money."

But there is a way, under certain conditions. The Small Business Administration can lend up to \$250,000 at 6 per cent interest for periods up to 10 years.

One of the main conditions under which the SBA will make a loan, however, is if such a loan is not available from private lending sources at reasonable terms.

The SBA actually has three ways of helping small businessmen who need loans. It consults with them on their money problems; it helps them get a loan from private lending sources; and, if a private loan is not available, it will lend money to qualified firms. As a result, the SBA does not compete with banks and other lenders and at the same time helps the small businessman to establish credit with a private bank in his own city or town.

Loan purposes and types

Loans are made by the SBA for three main purposes:

1. To finance business construction, conversion or expansion.
2. To finance the purchase of equipment, facilities, machinery, supplies, or materials.
3. To supply working capital.

The agency's loans are of two types, "participation" and "direct." A participation loan is a loan made by the SBA together with a bank or other lending institution. A direct loan is a loan made by the SBA alone. The SBA cannot make a direct loan if a private lending firm will share the loan with the agency in that particular case.

Private financing

Since the SBA cannot by law make a loan unless a private loan

cannot be had at reasonable terms, a small businessman must first try to get a loan from his bank or other local lending firm. If the bank or other firm is not able or willing to make a loan, the businessman must find out if the private lender will lend the money if the SBA shares in the loan. If the private lender agrees to share a loan with the SBA, the businessman can apply for a participation loan. If the bank or other lending firm will not make a loan even if the SBA takes part, then the businessman can apply to the SBA for a direct government loan.

Who is eligible for a loan?

To qualify for either a direct or a participation loan, a firm must be a small business and meet certain credit requirements.

A "small business" is one that is independently owned and operated and one that does not domi-



nate its field. These rules are set forth in the Small Business Act of 1953 which established the SBA. In addition, certain other guides have been developed for judging whether a business is small. Most retail and service firms are considered small if their yearly sales or income are \$1 million or less.

Besides operating a small business, as outlined above, a small businessman who wants a loan must meet five credit requirements. These are:

1. He must be of good character.
2. There must be evidence that he has the ability to operate his business successfully.
3. He must have enough capital in the business so that, with the loan he is asking for, he will be able to operate on a solid financial basis.
4. His loan must meet the requirement of the Small Business Act which states "the loan must be of such sound value or so secured as reasonably to assure payment."
5. His firm's past earnings record and future prospects must show that he will be able to pay the loan back out of the income of the business.

All of the above would, of course, be judged by the SBA office.

That's not all. There are 11 conditions under which a loan will not be given even if the businessman passes all other requirements. Seven of these conditions apply to LPG dealers. A loan will not be given:

1. If the money can be gotten (a) from a financial firm, (b) by selling at a reasonable price assets not needed in conducting the business or for future growth, (c) through use of the personal credit and/or resources of the owner, partners, management or principal stockholders, (d) from other government agencies which provide credit especially for the loan applicant's type of business, or (e) from other known sources of credit.
2. If the loan would be for the purpose of (a) paying off a cred-

Small Business Administration Loan Information at a Glance . . .

What is the Small Business Administration?

The Small Business Administration is a federal agency set up in 1953 to help small business. One of the ways the SBA helps is by getting loans for small businesses at favorable terms.

How are SBA loans made?

Loans are made only after a businessman's own bank has refused to make a loan. Loans are "direct" or "participating." A direct loan is made entirely by the government. A participating loan is made partly by the government and partly by a bank or other lending firm.

How much money can you borrow?

A direct loan can be made for any justified amount up to \$250,000. In a participating loan, the SBA can go up to \$250,000 for its part and the rest depends on the bank. Pool loans, explained in the accompanying article, can be for much more.

What are the loan terms?

Loans are made for as long as 10 years. Pool loans go up to 20 years. Interest on a direct loan is six per cent. Interest on a participating loan may be lower if the bank will go lower but no higher than six per cent. Pool loans carry five per cent interest. Payment is usually by monthly installments with interest on the unpaid balance.

For what uses are loans given?

Loans are given:

1. to pay for building construction, conversion or expansion,
2. to buy equipment, facilities, machinery, supplies or materials, and
3. to supply working capital—cash.

Who can apply for a loan?

Loans are made to small businesses. A small retail or service trade firm (such as an LPG dealership) would be one whose yearly sales and other income is not over \$1 million. The business must be independently owned and operated and must not dominate its field.

Can any small business get a loan?

There are certain requirements. These include the businessman's character, his ability to operate his business, the amount of money he has invested in the business, his collateral and his ability to repay the loan.

When will a loan not be made?

A loan will not be made if funds are available from other sources or if the money will be used for paying off certain types of creditors, for changing ownership, for speculation, for recreational or amusement facilities or purposes, or if the money will be used to encourage monopoly.

What collateral is required?

This depends on many things including the honesty and ability of the business' management. Physical collateral may be a mortgage on land, buildings and equipment; signing over of warehouse receipts for marketable merchandise, certain types of contracts or accounts receivable; or a mortgage on property such as rolling stock and furniture.

What if a firm doesn't have enough collateral?

A special type of loan can be made under the Limited Loan Participation Plan. This is for a business that cannot pledge as much collateral as is needed for other loans, but which has a good earning record, sound management and a good record of repayment of other bank loans.

How long does it take to put a loan through?

A decision is given in less than three weeks.

Where can you get additional information, help and application forms?

Write the Small Business Administration, Washington 25, D. C., for the location of the field office nearest to you.

itor or creditors who have not required enough security or who are in a position to take a loss, (b) providing money for distribution or payment to the owner, partners or shareholders, or (c) replenishing working capital which was used for the above purposes.

3. If the reason the businessman wants the loan is to make possible a change in the ownership of the business.

4. If the money will be used for speculation in any kind of property, real or personal, or if it will be used to free other money for that purpose.

5. If the business is supported by charity or is operated as a charity.

6. If the loan will finance construction, acquisition, conversion or operation of facilities which will be used for recreational or amusement purposes (except where the businessman is in that line of business).

7. If the money will be used to encourage monopoly or used for purposes which are out of step with the American principle of free competition.

Amount of loan

If an LPG dealer believes he can qualify under all of these conditions, he will be ready to apply for his loan. Actually, although there seem to be a lot of conditions, most dealers should meet them easily and the SBA will give all of the help needed in checking you through.

Now, how much money can you borrow? That depends on how much you need to do whatever you want to do with the loan. But \$250,000 is the most any one borrower can get. This limitation is for a direct loan or for the SBA's share of a participating loan.

There is an exception to this limit. If a corporation has been formed by a group of small business concerns for the purpose of buying raw materials or supplies (gas, appliances, and equipment), it can apply for more than \$250,000. In the case of such a loan, called a "pool" loan, the upper limit is \$250,000 multiplied by the num-



Seal of the United States Small Business Administration.

ber of small firms which have formed and capitalized the corporation.

Loan terms

SBA loans are usually paid back in regular installments and usually monthly. The payments include interest on the unpaid balance. Interest is charged only on the actual amount borrowed, and for the actual time the money is outstanding. Any or all of the loan may be paid back before it is due with no interest penalty.

The maximum length of a loan is 10 years, except that pool loans may be for 20 years.

The interest rate is 6 per cent. Certain small business loans made to veterans, and guaranteed by the Veterans Administration, are made at $4\frac{1}{2}$ per cent. In loans made jointly by the SBA and a bank or other institution, the private lender may set the interest rate as long as it is no more than six per cent. Pool loans carry a five per cent interest rate.

Collateral

A certain amount of security is required for an SBA loan. This collateral must be such that, together with the ability of the firm's management and its past and prospective future earnings, repayment is considered certain. Collateral may consist of one or more of the following: a mortgage on land, buildings and equipment; the signing over of marketable merchandise; the signing over of certain types of contracts; a mortgage on property such as trucks, furniture, etc.; or in some cases the signing over of accounts receivable. As a rule, a mortgage on inventories

such as appliances is not acceptable unless the goods are stored in a bonded warehouse.

Special loans

Another type of loan is available which does not require as much collateral as do regular business loans. These loans might be just the thing for many LPG dealerships. The loans are made to firms which have a good earning record, competent management and a good record with local banks for meeting other payments on time.

Loans under this plan are made entirely through banks with the banks participating in them. The SBA share of such loans can be no more than \$15,000 or 75 per cent of the loan, whichever is less. Maximum length of these loans is five years instead of 10. Repayment is monthly with an interest rate of not more than six per cent.

For these loans the bank is responsible for deciding how adequate the proposed collateral is and for getting the pledge of collateral. This collateral may include, but is not limited to mortgages on real or personal property, signing over of accounts receivable or money due on contracts, and corporate guarantees or personal endorsements.

This special type of loan is called the Limited Loan Participation Plan.

How to apply

SBA Form 4 must be filled out for a regular participation loan or a direct loan. If the application is for a regular participation loan, the firm files with the participating bank three copies of the application and three copies of any other documents considered necessary. The bank then prepares a request to the SBA for a participation agreement.

If the application is for a direct loan, two copies of the application and supporting data are filed with the SBA field office serving the firm's area. The application must have with it a letter from the firm's bank stating that the bank is unable to make the loan. If the amount of the requested loan would be more than the bank's legal lending limit, the bank must also state

in the letter whether the loan is available from a correspondent bank. If the firm is in a city of 200,000 or more, the application must be accompanied by letters from two banks stating they cannot give the loan.

For a Limited Participation Plan loan, application should be made on SBA Form 6. Three copies of the application and three copies of supporting statements are filed with the bank taking part. The bank takes it from there.

The SBA attempts to give prompt attention to all applications. In most cases, the businessman will know within three weeks whether he can have the loan. Generally, the verdict on a participation loan will come through faster than with a direct loan, since the bank does much of the preliminary work on the participation loan.

Limited Loan Participation Plan applications and applications for smaller loans are often acted on in less than one week, since in most

cases the local SBA office makes the decision.

The SBA makes no charge for its services. Services include information and assistance in preparing and filing the loan application or assistance with financial management problems. If a businessman wants to use a lawyer or accountant to help him prepare his loan request, he may do so and pay for the service subject to SBA approval. Under no conditions, however, can a businessman agree to pay someone for helping him get a direct or participating SBA loan if that payment is to be made only if a loan is approved.

If the loan is approved, a formal loan authorization is sent to the firm. This gives the conditions under which the loan will be closed. When the businessman is ready to meet these conditions he contacts the SBA and the actual loan closing is arranged. The loan is made by check, either immediately or as required by the applicant.

Although many of the procedures, requirements and conditions might sound complicated, your bank or your local SBA office will be able to set you straight in short order. Put your problem to them and let them see you through. They are experts in the matter.

Further information, application forms, and the location of the SBA field office nearest to you can be had by writing to the Small Business Administration, Washington 25, D. C.

The overall policy which guides the SBA in its lending program has been stated by the agency's loan policy board in these words: "It is our resolute determination to help competent small businessmen of good character qualify for Small Business Administration financial assistance. If a loan will actually benefit the borrower, the community and the economy, our approach will be to make every effort to find a way in which the loan can be properly made." ■

Locations of Main, Branch, and Regional Offices, Small Business Administration

Main Office—Washington, D. C.

Small Business Administration, Washington 25.

Region I—Boston, Mass.

131 State St., Boston 9.

Region II—New York, N. Y.

1790 Broadway, New York 19. *Branch offices:* Chimes Bldg., 500 So. Salina St., Syracuse, N. Y.; 70 Arch St., Hartford, Conn.

Region III—Philadelphia, Pa.

Jefferson Bldg., 1015 Chestnut St., Philadelphia 7. *Branch office:* Fulton Bldg., 107 Sixth St., Pittsburgh 22, Pa.

Region IV—Richmond, Va.

900 No. Lombardy St., Richmond 20. *Branch offices:* Calvert Bldg., Fayette & St. Paul Sts., Baltimore, Md.; Embleton Bldg., 922 Quarrier St., Charleston, W. Va.; Independence Bldg., 102 W. Trade St., Charlotte, N. C.

Region V—Atlanta, Ga.

Peachtree-Seventh Bldg., 50 Seventh St. NE, Atlanta 23. *Branch offices:* 704 No. 22nd St., Birmingham, Ala.; Falls Bldg., 22 No. Front St., Memphis, Tenn.; Pacific Bldg., 327 NE First Ave., Miami 32, Fla.

Region VI—Cleveland, Ohio

Federal Reserve Bank Bldg., 713 Superior Ave., Cleveland 1. *Branch office:* Federal Bldg., Sixth & Broadway, Louisville 2, Ky.

Region VII—Chicago, Ill.

226 W. Jackson Blvd., Chicago. *Branch offices:* Federal Bldg., Indianapolis, Ind.; Woolworth Bldg., 105 Monona Ave., Madison, Wisc.; Putnam Bldg., 215 Main St., Davenport, Iowa.

Region VIII—Minneapolis, Minn.

Metropolitan Bldg., Second Ave. & Third St., Minneapolis 1.

Region IX—Kansas City, Mo.

Federal Bldg., 911 Walnut St., Kansas City 6. *Branch offices:* Federal Office Bldg., 15th & Dodge Sts., Omaha 2, Nebr.; New Federal Bldg., 1114 Market St., St. Louis 1, Mo.; Bitting Bldg., 107 N. Market St., Wichita, Kans.

Region X—Dallas, Texas

1114 Commerce St., Dallas 2. *Branch offices:* Federal Office Bldg., Fannin & Franklin Sts., Houston 14, Texas; Masonic Temple Bldg., 333 St. Charles St., New Orleans 12, La.; Bankers Service Life Bldg., 114 N. Broadway, Oklahoma City 2, Okla.; U.S.O. Bldg., 217 Main St., Little Rock, Ark.

Region XI—Denver, Colo.

New Customhouse, 19th & Stout Sts., Denver 2.

Region XII—San Francisco, Calif.

Flood Bldg., 870 Market St., San Francisco 2.

Region XIII—Seattle, Wash.

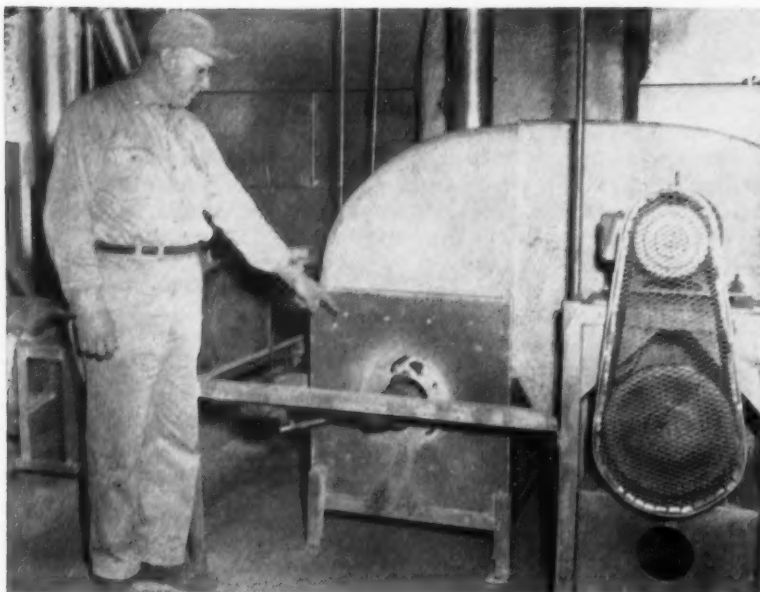
Burke Bldg., 905 Second Ave., Seattle. *Branch offices:* Federal Office Bldg., North Park Ave. & W. Lawrence St., Helena, Mont.; Old U. S. Courthouse, 520 S.W. Morrison St., Portland 4, Ore.

Region XIV—Los Angeles, Calif.

Western Pacific Bldg., 1031 S. Broadway, Los Angeles 15.

Region XV—Detroit, Mich.

U. S. Post Office & Courthouse, 231 W. Lafayette Blvd., Detroit 26.



When Western Pulp Products Co. got tired of sitting around each morning until a smoldering pile of sawdust got hot enough to fire its steam boiler, the firm switched to LPG. Now the plant jumps into action in an instant.

Left, Western Pulp Products Co. owner-operator Fred Krehbiel points to one of three propane-fired burners which supply instant heat to his papier-maché drying oven. Blower forces heat into oven. Below, dried flower pots roll out of the end of the 80 ft oven. Clean propane heat does not dirty white pots.

We just turn on the burners . . .

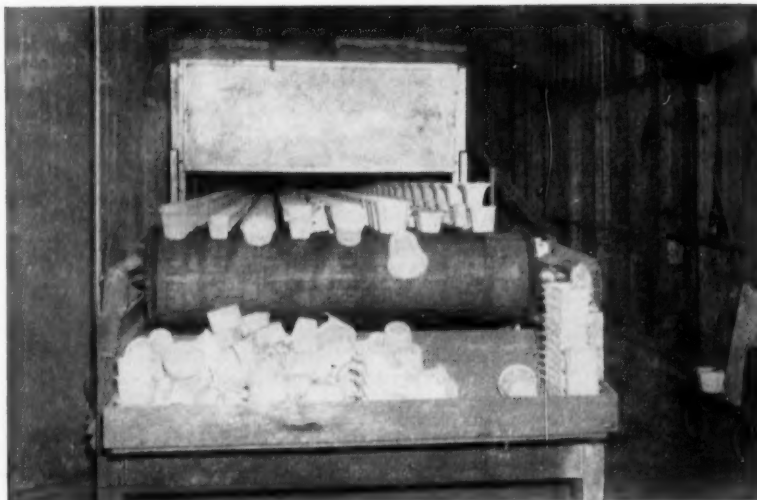
By SELMA FINNEY

WHEN you are manufacturing 9000 white papier-maché flower pots every day, and when it takes 250,000 cfm of 370°F air to dry them, the heat must be fast, controllable, dependable and clean. And that, according to Fred Krehbiel, owner-manager of Western Pulp Products, Corvallis, Ore., is why we could not do without L. P. gas.

It's not that Mr. Krehbiel is guessing about the superiority of LPG for drying his paper flower pots. He tried steam heat produced by a sawdust burner and then tried oil.

"We finally decided on propane, and it was one of the smartest moves we ever made," Mr. Krehbiel said. "From that day on we have been going great guns and have had no trouble getting sufficient heat to give us a complete cook-dry in our 80 ft oven."

Papier-maché flower pots are used by florists. They are made in various sizes and shapes and have tar in the bottom to keep them from leaking. Western Pulp Products turns out 200,000 a month, even when business is dull. Mr.



and go right to work

Krehbiel has been a pioneer in the manufacture of this type of flower pot and is constantly experimenting with new ideas. Currently, he is attempting to find a lower cost material for turning out the same product.

Scrap wax paper—the type used for wrapping so many items of food—is presently used as the

base for Western Pulp's papier-maché. The sulfite wax paper is transported as baled scrap from Everett, Wash. The scrap comes from a wax paper manufacturer in that city.

A total of 1600 lb of this rejected wax paper is used by Western Pulp in an eight hour shift. It is turned back into pulp and a

special chemical combination is added to it to produce the material from which the flower pots are molded.

After the wet pulp has been molded into shape by one of 35 different dies, the pots are ready for drying. This is done in the plant's 80 ft drying oven. The pots travel through the metal oven on an endless belt, 6 ft wide.

Heat for the oven is provided by three propane burners—one 750,000 Btu and two 500,000 Btu each. Five 50,000 cfm fans blow the heat over the flower pots as they pass through the oven.

When sawdust-generated steam heat was used, drying couldn't begin until the sawdust was burning at a hot enough temperature to begin heating the water to steam. Direct heat could not be blown into the oven because of the soot involved in burning sawdust. The soot would blacken the drying papier-maché pots.

Direct heat from oil burners also blackened the pots because of the soot, and oil required special handling and was a dirty operation.

Propane gives a clean direct heat which can be easily controlled to keep oven temperature at 370° F.

Five main reasons why Western Pulp Products is sold on propane were outlined by owner-manager Krehbiel. These are:

1. It gives a much faster heat than other fuels. As soon as the burners are on, the plant is ready to swing into action.

2. It is a clean-burning fuel. No



Curt Wolfenberger, manager of the Corvallis, Oregon, branch of Gas Heat, checks regulator on Western Pulp Products' 1000 gal. propane storage tank. The drying oven's three burners use 120 gal. during each eight hour shift.

other fuel tried would allow a direct heat on the product.

3. Propane is efficient, far more efficient than any other fuel tried.

It is fully controllable, automatic and requires no labor. Burners and oven are always clean.

4. There is no product damage with propane.

5. Propane is dependable. Electricity may fail due to a storm, sawdust cannot be had when the mills are not running, but propane is always on hand.

Western Pulp buys its propane from the Corvallis branch of Gas Heat Co. Mr. Krehbiel emphasizes that he believes propane is as dependable as the company which supplies it and states that "Gas Heat has proven that it is dependable."

Gas Heat's Corvallis branch

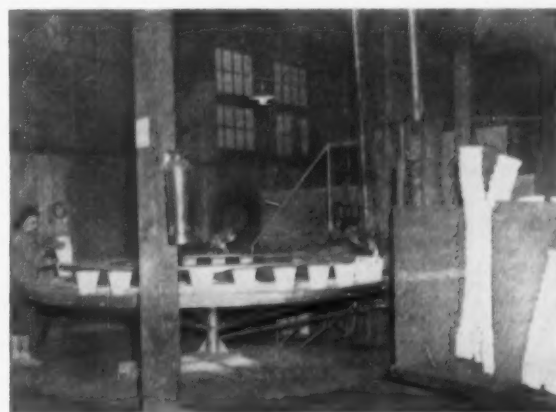
manager Curt Wolfenberger has been supplying the firm with more than 120 gal. of propane for each eight hour shift or an average of 600 gal. weekly.

Peak season for Western Pulp activities is during the warm weather, providing a steady year-round load plus an extra load in the summer, a neat combination of load building and balancing. The company employs nine full-time persons during the year and takes on extra help for the peak season. One die maker is kept busy the year-round turning out new styles to satisfy the customers.

Western Pulp likes to give customer satisfaction just as it likes to receive satisfaction, and LPG is completely satisfying the firm's drying oven needs. ■



Close-up of one of the two smaller burners shows plumbing and safety controls. Three burners together supply the drying oven with 1,750,000 Btu.



Flower pots go onto this revolving table before they are packed for shipment. Automatic dispenser puts 1/4 in. of pitch on bottom of each for waterproofing.

What's happening with the rural electrification program?

By NEIL REGEIMBAL • BPN Washington Correspondent

THE government's once-mushrooming rural electric program is apparently leveling off on a plateau well below the peak.

With more than 94 per cent of the nation's farms now electrified—most with the help of government loans—the program is going now primarily for improvement and expansion of existing systems.

President Eisenhower's proposed budget for the fiscal year beginning next July 1 requests Congress to appropriate a total of \$209.7 million for new loans. An additional \$10 million would be needed for administrative costs.

The following table shows how the rural electrification program spending is now slowly decreasing:

Fiscal year ended June 30, 1955...	\$221 million
Fiscal year ended June 30, 1956...	318 million
Fiscal year ending June 30, 1957...	210 million
Fiscal year ending June 30, 1958...	209.7 million

Business expanding

The Rural Electrification Administration is a branch of the U. S. Agricultural Department charged with dispensing these low-interest (2 per cent) loans. While the loan program is receding slightly, the business handled by its systems is expanding rapidly.

Total operating revenues for these power companies financed by REA amounted to more than \$500 million in 1956. This is an increase of more than \$51 million over the previous year. Net margins in 1956 hit \$73.3 million, up 25 per cent.

The REA program is now 21 years old. Average monthly consumption by residential users, including farm uses, rose by 12 per cent in 1956, hitting 269 kilowatt hours.

Average cost per kilowatt hour is dropping, down to 2.86 cents last year. This was four per cent below 1955. Average monthly bills, however, rose from \$7.20 in 1955 to \$7.69 in 1956.

REA-financed electric systems last year produced 22 billion kw/hr, about 15 per cent above 1955. At present, there are 982 active REA borrowers—still owing on loans. Customers of REA-financed systems number 4.8 million, served by 1.3 million miles of lines financed by \$2.8 billion in loans.

New legislation

Legislation is pending in Congress to repeal the requirement that 25 per cent of the loan funds of the REA be apportioned to states regardless of their demands.

Under the existing formula, one fourth of all REA electrification loan funds are doled out to states in the proportion that the number of nonelectrified farms in the state bears to the national total of non-electrified farms.

This formula, the bill's sponsors say, is not needed because more than 94 per cent of all farms are electrified.

The bill would also cut the loan program back somewhat, the sponsors say. This is because at present REA must ask for more funds than it needs in order to fill requests in one state and still meet the 25 per cent formula for other states.

The bill, S. 1296, is sponsored by Sens. Curtis (R.), Neb.; Hruska (R), Neb.; Carlson (R), Kans.; Goldwater (R.), Ariz.; Barrett (R.), Wyo.; Young (R.), N. Dak., and McCarthy (R.), Wisc.

Higher interest rates

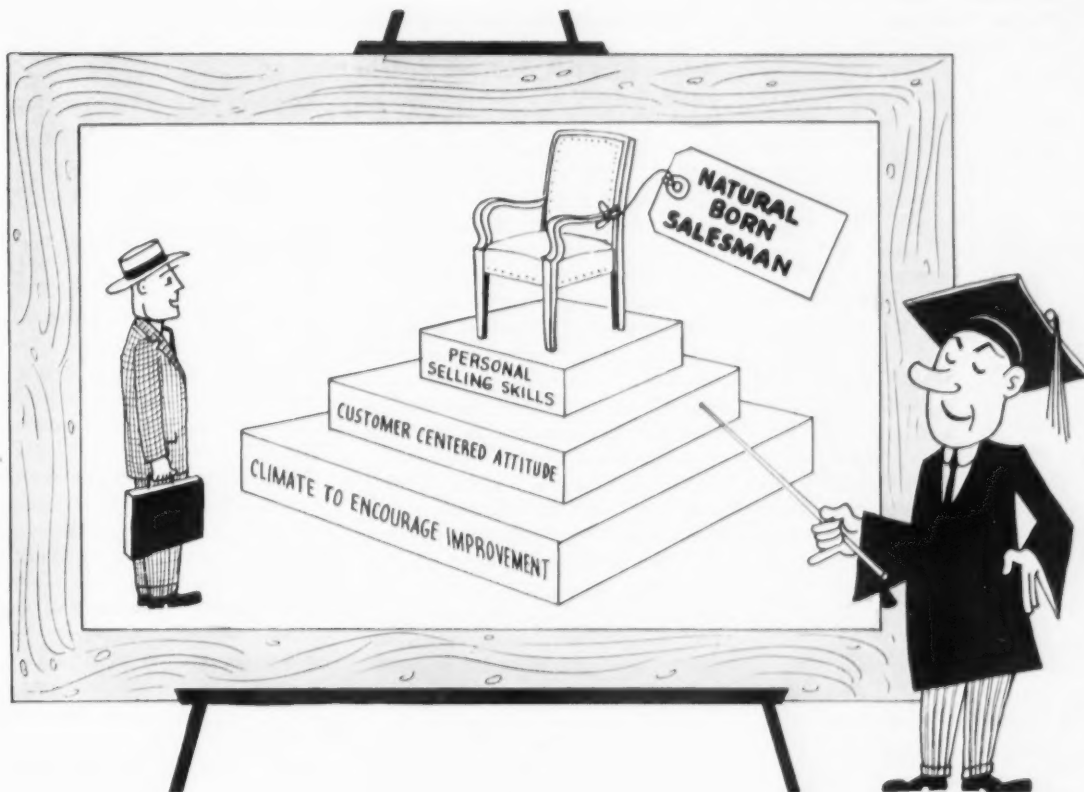
A strong drive to increase the interest rates on electrification loans financed by the REA will be made in Congress this year.

President Eisenhower, in his budget message, urged increased interest rates for several government lending programs, particularly those with fixed rates "established when interest rates were much lower than today."

More than 400 different applications of electricity on farms and in farm homes have been counted by the agency. Households use from 58 to 87 per cent of the total electric power used on farms, while farming operations use only 3 to 30 per cent, depending on the region. An additional 5 to 26 per cent of the total is used for lighting farm homes and service buildings.

Only five states now have less than 85 per cent of their farms electrified, the Rural Electrification Administration says. ■

There are no "natural born salesmen." They were just trained earlier. They grew up from childhood with the social skills on which selling success is based. These skills are not the exclusive property of any small and select group. They can be learned at any time of life by anyone who will adopt a helpful attitude and follow a simple set of rules. Here is how it can be done.



Salesmen are made—not born

By DONALD F. MULVIHILL, Professor of Marketing • University of Alabama

HE's a natural born salesman."

That phrase was common back in the 1920's. During the 1930's the ideas of psychological research, education and training came to replace the concept of "natural" selling skill. Then, during the 1940's and World War II, the key to salesmanship was often simply having the item to sell.

Modern studies of expert salespeople, however, indicate that top sellers can develop in even the smallest firm—without lengthy training programs and without depending on complicated research or expensive staff specialists. Personal selling proficiency can be self-taught through constant, on-the-job practice. For this to take place, three elements are needed:

a customer-centered attitude, an appreciation of the importance of certain basic, personal-selling skills, and an attitude of management which encourages improvement.

Customer-Centered Attitude

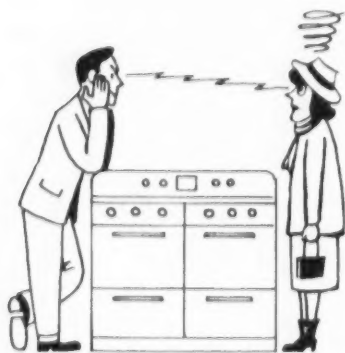
Consciously or unconsciously, an able salesperson starts off with

Salesmen are made . . . Any salesman can learn to be a "natural born salesman"

his interest and thinking focused primarily on the customer—rather than on the company, on the product, or on himself. The desire to understand the customer's behavior and wants is essential.

• **Differences in people**—There is little argument with the idea that people are different. But actually, many of the differences exist in how people go about getting what they want, rather than in their basic needs. When Mr. Small, a salesperson, sees Mr. Trask, a potential customer, as "stubborn and stupid" it is usually very hard for Mr. Small to recognize any valid reason for Trask's acting as he does. He believes "he's impossible." Nevertheless, if Mr. Small is to sell to Mr. Trask, he must come to accept his behavior as a fact—even if it differs from his ideas of what Mr. Trask ought to do or say.

• **The right "wave length"**—To improve personal selling, your salespeople have to get on the cus-



To improve personal selling, a salesman must first get on the customer's wavelength.

tomers wave length. Doing this requires that they look at the customer as, perhaps, a kind of store-room with all his past experiences packed away inside. These experiences account for his behavior, viewpoint, and feelings. When, instead of the "impossible" idea, a salesperson substitutes the "store-

room" approach, there is less tendency to blame a customer for being "difficult," and more success in discovering what to him is important. Once a seller knows that, the chances of making a sale are already better.

• **Basic desires**—Although the forces which make people what they are can be complex, certain basic desires are common to almost everybody. Two of them are: inner self-confidence, and recognition. When a person's relationships with others yield satisfactions for those desires, it is usually relatively easy to do business with him.

• **Inner self-confidence**—Every customer wants to feel sure of himself. If the salesperson helps to strengthen this feeling, the selling situation is improved. But if the salesperson "yanks the rug from under the customer's self-confidence," as it were, further dealings may be almost impossible. Customers like to feel that their business is important to the company, that their ideas are good, that their judgment is sound, and that salespeople respect them. If they get opposite feelings the sale is likely to fall through.

• **Recognition**—Customers, along with everybody else, want to be appreciated. In fact, many of the things they buy are intended to enhance their recognition by others. In the same way, they want recognition in the selling situation. They like to be thought of as individuals and as important. They don't like to be ignored or taken for granted. Some, for example, complain bitterly if they feel that they have been overlooked. Others simply leave as quickly as possible and go where they feel they will get proper attention.

• **Importance of intelligent listening**—Acknowledging that there are great differences as well as certain similarities among people, how can a cooperative relationship between salesperson and cus-

tomers be built up? Perhaps the best answer is: through intelligent listening. This means that the salesperson listens with an attitude that permits the customer to express freely his feelings and prejudices. One way for a salesperson to check this listening



Customers, like anyone else, like to be appreciated.

process is to restate in his own words, the customer's position until he has expressed it to the customer's complete satisfaction before moving on to any other phase of the discussion. Intelligent listening provides clues as to how the customer sees the situation or the merchandise. It is not, however, simply nodding and saying "Yes" while the other person talks. It means thinking about what's being said and what it means.

Basic Personal-Selling Skills

Good personal selling is, of course, made up of more than a customer centered attitude. That's only a start. Personal selling involves many actions, too. To improve means that the salesperson must actually do certain things more skillfully than before. What things? Here are some of the essential ones.

To begin with, the salesperson's main function is not so much finding out whether a customer wants something, but rather finding out what is wanted. After that, it is a question of helping to fill that want and insuring satisfaction.

If you were to study a cross-section of men and women noted for success in personal selling,

you would find a dozen or so main functions which these experts all did well. These common skills are:

1. Greeting customers
2. Asking questions
3. Displaying merchandise
4. Putting customers in a good frame of mind
5. Showing interest
6. Using opinions as selling points
7. Supplying facts
8. Answering questions
9. Meeting objections
10. Agreeing with customers
11. Suggesting additional merchandise
12. Building repeat business

Successful sellers often start off by using such greetings as "Good morning! May I help you?" or "That's pretty, isn't it?"

Good questions are short and easy to answer without the chance of embarrassment. Thus, for example, the skilled salesperson is likely to use an approach like: "How soon do you need this?" instead of "How much can you afford to spend?"

Effective salespeople show as they sell, performing several functions at once. For instance, they couple display of merchandise with greeting the customer, answering his questions, stating facts, and using opinions or experience of other customers as selling points.

Most able salespersons rely on ordinary acts of courtesy and friendliness to get customers in good frames of mind and keep them there: offering a seat or hanging up a coat are typical. They pay close attention, also, to customers' comments and reactions.

Skilled sales personnel show interest by remembering names and past purchases of regular customers and by inviting new ones to put their names on a mailing list for announcements.

On the use of opinions as selling points, astute selling employees note that customers are often more interested in what somebody thinks of an item than in specific

facts about it. Many times the salesperson who reminds a customer that an article is "nice," "popular," "smart," "good-looking," "lovely," or "right" will have better success than someone



Acts of courtesy, such as offering a seat, get the customer in a good frame of mind.

who outlines physical specifications.

In supplying facts, the best sellers stick to the merits of their own product and avoid discussion of a competing item's shortcomings. They are familiar with product features, but they don't burden customers with more information than is requested.

When answering customers' questions, expert salespeople are usually specific and candid. To a customer wondering whether an appliance would need to be serviced, a good salesperson would reply, "Equipment of that kind will wear with use and sooner or later will need to be serviced." Prices are quoted promptly and accurately, without hedging.

Meeting objections takes tact and understanding. Valid ones must, of course, be admitted as fact. Competent salespeople usually answer them by pointing out the article's compensating virtues. If the customer simply indicates a preference for a competing brand the reply may be, "Perhaps you'd be wise to try our brand so as to make a comparison. It's a very fine product and many people, once they've used it, like it better than anything else."

Even when a customer is entirely wrong, the expert salesman will not contradict or correct un-

less specifically asked for a confirmation of facts or an expression of opinion. Agreement helps to dissipate sales resistance, to avoid argument, and to establish an atmosphere conducive to making the purchase.

Proficient sellers seek opportunities to suggest additional merchandise after a customer has made an initial purchase. This may involve proposing related articles; calling attention to special-sale items; suggesting seasonal merchandise; and promoting "new" goods which have just come in, or unusual goods being distributed exclusively.

Top-flight sales personnel try to have customers leave with goods which are suited to their wants and pocketbooks, and with the feeling that their patronage is welcomed and sought in the future. Frequently used are parting remarks like, "Many thanks, Mrs. Madison, I'm sure you'll be pleased with this item. It's always a pleasure to help you; do come in again soon." Sometimes a friendly comment makes the difference between a repeat customer and one who goes somewhere else next time.

A Climate to Encourage Improvement

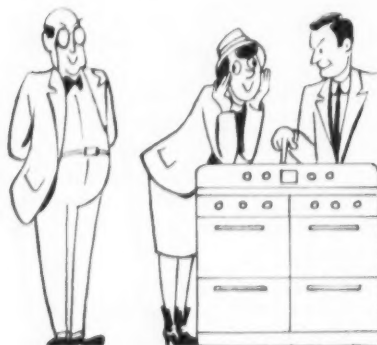
The foregoing points can be applied by an individual salesperson in his own job. Consider now the role which you, as owner or manager, must play in providing a climate in which your salespeople will want to improve and will be helped to do so.

• **Maintaining ethical standards**—Some managers see little wrong with what they term "kidding employees along to keep 'em happy." This can involve withholding a little information here, stretching the truth a bit there, breaking a promise another time, and other acts of that sort. These lapses in ethical standards are damaging to personnel development. Respect for management is undermined. Confidence and incentive are lost. Effective communication becomes difficult.

If a salesperson is promised a raise within a certain period, it

Salesmen are made . . . It takes skills, proper attitude and the right management

is highly important that this promise be kept. Similarly, if a salesman is promised that he won't be transferred, the same is true. Many managers don't consider themselves untrustworthy when they keep putting off things they've agreed to do. But the person who is counting on action being taken will lose confidence in a boss who distorts facts and doesn't keep his word. Truth and honesty are important because one disgruntled employee can sour the others very quickly. They in turn cannot help but pass their bad humor on to customers.



The top manager, more than any other person, sets the tone of the business.

• **Setting a favorable tone**—The top manager, more than any other person, sets the tone of the business. What is tone? It is the attitude of the group toward each other and the public. It has an important influence on people's desires to improve. A favorable tone makes employees want to stick with a company and help it grow. An unfavorable tone makes them more interested in finding pleasanter work than in doing a better job. Every concern has its particular tone; "country club" and "ulcer outfit" are two of the employee terms for it.

What determines tone? Mostly, it's what the top man does and says. For example, one boss

dresses slovenly, uses profanity, delights in practical jokes, and refers to customers as "suckers." Another boss listens more than he talks, always seems relaxed and cheerful, is often first at work and last to leave, and makes decisions quickly and quietly. Each man imparts a tone to his organization: the first will tend to stifle improvement; the second will tend to promote it.

• **Keeping people informed**—Salespeople, like most others, want to know what is going on in the company. In the absence of information from the head man, rumors will develop. These should be dealt with decisively and promptly. They should not be ignored. Some rumors, of course, will arise and upset people despite all efforts. Two points are important: First, try to track down the origin of the rumor and relieve its source. Second, make sure that the rumor is identified as such, and corrected with complete and accurate facts. The best way to prevent rumors is through a regular report from the top man on current activities and plans.



The best management approach is to stress thought and action leading to a brighter future.

• **Looking ahead**—People tend to want to improve more in a climate where the emphasis is on looking ahead rather than on what

happened in the past. In measuring performance and setting budgets it is easy to talk too much in terms of what expenses were "in the old days," or of the advertising program for "last year," or of how much was sold "last half," or of the errors made in the "last clearance sale." This sort of thing tends to produce conflicts in the salespeople's minds; management tells the salespeople to do better tomorrow, but talks of nothing but yesterday. The best approach is to stress positive thought and action leading to a brighter future.

• **Handling preconceptions**—Both salespeople and managers can have preconceived ideas. These ideas may or may not be correct; the important point is that people do have them and do make judgments based on them. If, for example, salespeople believe that "working conditions are poor," or that "only the least desirable customers trade here," such beliefs become facts—at least to those people. The real problem is: Why do they believe as they do? Little is likely to be accomplished by lecturing employees to straighten them out. The "papa-knows-best" attitude is seldom effective. What is needed in these situations is less "thou shalt nots" and more discovery of facts. If it is to be altered, a preconception must be understood.

• **Allowing for mistakes**—Valuable lessons can be learned from mistakes. Sometimes, in fact, they are better teachers than success. Without mistakes there is no progress. Hence, a good climate for improvement implies the opportunity for salespeople to make mistakes, to admit them, and to profit by them.

A customer-centered attitude, basic personal-selling skills and a climate to encourage improvement can build any salesman into what was once considered a "natural born salesman." Such salesmen can produce sales, retain customers, create respect for the firm and gain the admiration of fellow employees and employers. ■

Professor Mulvihill's article is presented in cooperation with the Small Business Administration.

Dear Uncle Dan,

When I started in the L. P. gas business, I took your offer to help me with my management problems rather lightly. It all seemed so simple then. But now that I've been in it for some time, wow—there are a lot of problems.

An L. P. gas dealer has to know a lot more than how to hook up a bulk tank to a customer's house. As soon as his business starts to grow a little he has to be a combination of every type of manager from sales to personnel.

It's not easy to decide what to do about a serviceman's gripe one minute, an out of gas customer's telephone call the next minute, and then answer the bookkeeper's questions on whether to pay a bill in 10 days or in 30.

Uncle Dan, you've been in this business a long time and have done a good job. It couldn't be that the opportunity for an L. P. gas dealer is *that* much better in your part of the country. My gosh, when I started in the business my territory looked good, too. I tried to go it alone for a long time, but now I

want some of your always good advice.

I'm going to write to you once a month and try to tap your brain.

Here's my problem right now. A lot of the bills we get—most of them for that matter—have that little gimmick about 2% 10 days. You know, we can pay the company two per cent less than the amount of the bill if we pay the thing in 10 days.

The way I look at it, that's just a way to pull my money away sooner. Not that I don't pay my bills on time. I usually pay by the 10th of the following month, or whenever the bill is due. But by holding onto my money until then, I figure that I have the use of it for 30 to 60 days. Money costs six per cent to borrow, why should I give it up for two per cent?

But my bookkeeper keeps saying that her last boss, a farm implement dealer up state, always had her pay bills in 10 days so as to get the two per cent. Gee, Uncle Dan. I'm no banker. How should I know what to do?

Should I take the 2% 10 day offers or not?

Your loving nephew,
Steve

Dear Steve,

Don't ever let me catch you hanging onto a bill marked 2% 10 days for longer than 10 days after the date on the bill. Sure you have use of the money for a longer time, but it's pretty expensive money.

Oh, don't feel bad. A lot of L. P. gas dealers ignore the two per cent and pay the bill when they are ready. Whenever I come across one, though, I always try to steer him straight. But I never thought my own nephew was guilty of passing up such a good deal.

When you pass up an offer of 2% 10 days in favor of paying on the 10th of the following month, you are actually paying two per cent per month for the use of the money. And that, my fine-feathered nephew, comes to 24 per cent per year.

I guess you'll agree that 24 per cent is a lot of interest for any money. You wouldn't pay *that* for investment capital, but by not taking that two per cent offer, you are actually paying 24 per cent for working capital.

You know, Steve, there are four ways of making

a higher profit. You can buy your gas and appliances for less, cut your costs of operation and so be able to market your products at less cost, or you can charge more. But a fourth way to make a higher profit is to put your money to work for you.

Let's look at it this way. Say an item costs you \$75 and you sell it for \$100. Your gross margin, before taking off costs, is \$25. Now if you take your cash discount, the cost of that item is only \$73.50, two per cent less than the \$75 list price. When you sell it for \$100, your gross profit is \$26.50 or 26½ per cent instead of 25 per cent. That extra 1½ per cent is all net. It didn't cost you a thing.

Take the example of a pretty small dealer who does only \$40,000 worth of business per year. He should include his own salary in overhead for tax purposes. If he makes a net profit at the end of the year of three per cent above his salary without taking cash discounts, he would make a profit of \$1200 per year. But, if he takes all discounts, he would have his three per cent plus his 1½ per cent,

Dear Steve (Con't.)

a total of 4½ per cent net over and above his salary. That would earn him \$1800 for the year. Do you realize how much more that is, Steve? That is a 50 per cent increase in net profit.

Can you imagine what this would mean to a dealer who does \$75,000 or \$100,000 per year? The greater your sales, the more you buy. And the more you buy, the more cash discounts you can earn if you pay your bills in 10 days.

I know what you are going to say. You'll say "pretty nice for the dealers who have the ready cash to pay their bills in 10 days." Well, it is pretty nice. To take advantage of cash discounts you do have to keep cash reserves on hand. That means you have to watch your working capital. Putting all of your money into inventory or equipment and leaving none to carry on the business is not wise at all.

A dealer who has money doesn't necessarily have a rich uncle who keeps him well stocked with the green stuff. Time and effort must be put into seeing that you have working capital on hand. Here are four things we do to assure working capital:

1. We keep close tabs on our accounts receivable. Often we have enough there to bring in sufficient cash to pay bills promptly. If necessary, you can borrow against accounts receivable.

2. Sometimes we take a short-term bank loan at 5 to 6 per cent. In this way, we do not pay the 24 per cent it costs when not taking the cash discount.

3. In paying our bills, we always pay bills that carry a discount first.

4. My bookkeeper watches all my bills for discount dates. These are checked in red so we don't forget them.

I know one L. P. gas dealer in the corn belt who put some extra cash into a cash discount fund. He set it up as a separate bank account. All bills which gave a cash discount were paid from the special account. He wrote checks for the full amount of these bills from his regular business account and deposited them in the special account. As you might guess, that special account really grew fast. Before much time passed, he drew off the profit in the special account and had his original account plus a brand new Cadillac for his wife.

Steve, cash discounts can give you a new source of profits that you obviously never even thought of before. Think twice before you file away a bill that carries the little message "2% 10 days." It means money in your pocket.

Write me any time. It's always good to hear from you. Say hello to the folks.

Your Uncle,
Dan

"Dear Steve," will be a monthly management feature.

REPORT FROM SOUTH AMERICA

Utility gas gives way to LPG in two major Brazilian cities

By L. M. PEPPERCORN

WHILE LPG dealers in the United States are picking up their cylinders and moving away from larger cities as utility gas mains take over, utility gas companies in the cities of Rio de Janeiro and Sao Paulo, Brazil, are pulling up their gas mains as L. P. gas in cylinders takes over.

Sound fantastic? Well, it's true. The principal reason for the big switch is the high price of importing coal for the manufacture of coal-gas.

Although LPG was introduced to Brazil 20 years ago, until 1946 consumption was relatively small. In that year, the total amount of LPG used was a little over 1 million gal. But suddenly L. P. gas caught on and the demand began to climb (see Table I). During 1956, more than 78.6 million gal. were consumed. This figure is especially impressive since it is three times the amount consumed in 1954. In the past two years, consumption increased more than 300 per cent.

Future development of the industry seems unlimited. Average daily consumption at this time is estimated at 275,000 gal. And there is plenty of room for expansion. Although only one million families now use L. P. gas, Brazil

● **BUTANE-PROPANE News** Brazilian correspondent Peppercorn knows his country and the LPG industry well. This is the first of his reports on use of L. P. gas in the large Brazilian cities. A second will follow in a few months.



LPG cylinders mix with palm trees at the Petrobras-owned Mataripe refinery in the state of Bahia, northern Brazil. This refinery is Brazil's largest producer of LPG with an annual output of 3.6 million gal. Behind the palm trees is the cylinder filling building.

TABLE I. CONSUMPTION, PRODUCTION AND IMPORTATION OF
LPG BY BRAZIL

Year	1946 to 1956 (in millions of gallons)		
	Consumption	Import	Production
1946	1.0	1.0	....
1947	1.9	1.9	....
1948	3.5	3.5	....
1949	5.8	5.8	....
1950	8.6	8.6	....
1951	11.6	11.6	....
1952	16.3	16.3	....
1953	19.5*	18.8*	....
1954	25.3	24.9	0.8
1955	44.4	16.1	24.8
1956	78.6	21.0	57.8

● * No indication as to source of LPG for difference between consumption and importation.

has a population of almost 60 million people.

Largest Brazilian distributor of L. P. gas is Companhia Ultragaz S. A. The company supplies more than 500,000 families or half of all Brazilian domestic users. Companhia Ultragaz is responsible for bringing LPG to Brazil originally.

Three other large firms are Gasbras, Liquigas and Heliogas, which, together with 14 smaller firms, came into being during the past 10 years.

Until 1954, all LPG used was imported. Although a small quantity was produced in 1954, real production began the next year when the Capauva and Cabatao refineries began operation. Production during 1955 was 24.8 million gal. and this jumped to 57.8 in 1956. As production in Brazil has increased, the percentage of LPG imported for consumption has decreased (see Table I). Demand increased so greatly in 1956, however, that a fair percentage did have to be brought into the country.

A huge gap still exists between demand for LPG and the amount that can be produced. But it is becoming increasingly difficult to import enough LPG to help bridge the gap. So far, LPG terminals exist only at Santos, the harbor for Sao Paulo which is Brazil's industrial center and has nearly three million inhabitants, and at the port of Rio de Janeiro, the nation's capital with over 2.5 million people.

Capacity of the terminal at Santos is 2.2 million gal. and at Rio it is 1.1 million gal. These terminals are no longer large enough to im-

TABLE II. COST OF IMPORTING COAL VS. COST OF IMPORTING LPG—BRAZIL

Port	Quantity per Year	Value	Consumers
Rio de Janeiro	220,000 to 242,000 tons	\$4,700,000	230,000
Sao Paulo (Santos)	110,000 to 121,000 tons	2,300,000	120,000
TOTALS	330,000 to 363,000 tons	\$7,000,000	350,000

LPG	
Quantity of LPG for 350,000 consumers at 84 gal. per year	Value
29,400,000 gal.	\$5,600,000

Relative Expense for One Consumer per Year		
Fuel	Quantity Required	Cost
Coal	1.1 tons	\$20
LPG	87 gal.	\$16

port the quantities of LPG required.

A huge increase in the supply of LPG and a resulting increase in use is expected by the end of 1959. At that time, a new refinery will be completed and ready for production. The refinery is being built by Petrobras, the Brazilian Government Petroleum Organ.

Brazil was the first country to successfully substitute bottled gas for gas in mains in urban areas with over one million inhabitants. With the rapid growth of Rio de Janeiro and Sao Paulo during the past years, the importation of LPG was found to be less expensive for domestic use than the importation of coal for manufacture of coal-gas. A cost comparison is shown in Table II.

With the expansion of the LPG gas industry in Brazil came fac-

tories for manufacture of gas appliances and equipment. Twenty manufacturing plants have been established during the past 15 to 20 years. Together, they employ more than 7000 persons.

During the next two years, LPG distributors are expected to order from the appliance and equipment factories 1.1 million gas ranges, 87,500 water heaters, 3.5 million LPG cylinders, 3.5 million valves and 1.4 million regulators.

Total value of these goods will total six billion cruzeiros (about \$92.3 million).

It's still a small market by American standards, but LPG is gaining wide acceptance in the South American country of Brazil and as more and more LPG is consumed, it is gradually pushing out the utility gas. The future for LPG in Brazil looks bright. ■



Triple bulk tank trucks transport L. P. gas from the Sao Paulo terminal to Porto Alegre, in the Brazilian state of Rio Grande do Sul. The route, which is the longest in Brazil, is 744 miles long and goes

through four states. This is the only route on which triple tank trucks are used. Capacity is 1833 gal.

WHETHER operated by a part-time safety committee or a full-time safety department, a properly organized safety program will cut down accidents for any LPG dealership. Petrolane Gas Service Inc., Signal Hill, Calif., will gladly agree to that. At the end of 1956, the company gave safe driving awards to 101 of its drivers.

Petrolane's Safe Driving Award Program, now in its sixth year, was operated for five years by a part-time committee. Only last year — with company plants stretching from the Canadian to the Mexican borders — was the program put in care of a full-time department headed by safety engineer William M. Richard. Both methods of operation have proved highly successful.

Under the program, all automotive accidents involving Petrolane drivers are reviewed by a special safety committee and the cause, responsibility and solution are determined. A verdict of "at fault," "not at fault" or "partially at fault" is given. Awards are made to all drivers on a yearly basis, with special awards at the five year and top levels. Industrial and general liability accidents are also reviewed and discussed.

Type and pattern of accidents are being studied as well as individual driving habits. This will help single out particularly dangerous conditions and especially poor drivers.

Safe driving award pins and cards are presented which signify the number of safe driving years accumulated. For 1956, there were 26 one-year men, 10 two-year men, 19 three-year men, 14 four-year men, 10 five-year men, 8 six-year men, 7 seven-year men, 5 eight-year men and 2 nine-year men. Awards were made retroactive to Sept. 1, 1947.

Three of the five-year men have perfect records and each received a gold ring. They are John D. Jones, Madera, Calif., and Lester O. Baumgardner and Glen L. Thoma, both of Yuba City, Calif.

George Thies, Delano, Calif., and Kermit Knutson, Long Beach, Calif., are the two nine-year men and each received the major

'Safety first' at Petrolane



Kermit Knudsen, Petrolane Gas Service Inc., driver, gets engraved gold wrist watch from executive vice-president and general manager Rudy Munzer for a nine-year safe driving record. Petrolane Safety Engineer William M. Richard looks on. In all, 101 men received awards for 1956.

award of an engraved gold wrist watch.

Membership of the safety committee consists of four permanent members appointed by Rudy Munzer, executive vice-president and general manager; and three temporary members—two long line drivers appointed by the superintendent of transportation, and one local retail employee appointed by the vice-president in charge of marketing.

At regular meetings, each accident which happened since the last meeting is reviewed. All evidence on hand is presented by the chairman and additional evidence may be supplied by others, including the employee involved in the accident, if available and if he wishes to be present.

The committee's decision is sent in writing to the employee's superior with a copy to the employee concerned. The employee can appeal the ruling within 10 days. The written appeal goes to the safety committee for recommendations and then to the Appeal Board. The board consists of President P. E. Foote, Executive Vice President Munzer, and Vice President in charge of Transportation Leonard Andrews.

In deciding whether an employee was at fault, the safety committee considers whether the employee could have reasonably avoided the accident by safe and defensive practices, regardless of the unsafe or careless conduct of other parties.

One "at fault" ruling ends an employee's safety record for any given period. Two or more "partially at fault" rulings ends a safety record for any one period. Although a "not at fault" ruling does not affect the employee's safety record all such rulings are considered when reviewing his safety record.

Information on how accidents occurred and how they could have been prevented is passed on to district managers in bulletins and letters. In addition, safety bulletins go to all employees. Safety is also emphasized in informational letters, posters, personal appearances, talks, demonstrations, and inspections of plants and rolling equipment.

Petrolane Safety Committee's theme for 1957 is Defensive Driving. The committee's motto: "No job is so important and no service so urgent that we cannot take time to perform our work safely." ■

Today's Gas Ranges

Today's gas ranges are modern as tomorrow. From top burner control to built-in griddle, they can't be beat for features never before seen in any range, regardless of fuel or power. These are the features to sell when selling a gas range over an electric unit. Below is a summary of 12 features provided to BPN by the Pacific Coast Gas Association. Have your salesmen refer to it often.

TOP BURNER TEMPERATURE CONTROL



The "brain" that makes all pots and pans automatic, this sensing element feels pan temperature and turns flame up or down as needed. Eliminates pot watching, burns and boil-overs.

BUILT-IN RANGE UNITS



Now gas ranges are built right in so that counters, work space and cabinets all fit flush. Completely integrated design makes kitchens handsome as they are efficient.

FLUSH TO WALL CONSTRUCTION



Flush to wall construction eliminates dirt catching areas, saves valuable kitchen space, gives a smooth, integrated appearance. Built to save cleaning.

AUTOMATIC IGNITION



Top burners, broiler, oven, all light instantly and automatically when you turn the valve. No matches, no waiting.

NEEDLE PILOT



Actually 1/5th the size of old style pilots, the new flame is about the size of a needle, gives fast, automatic, flexible ignition, yet keeps the range cool when not cooking.

TOP BURNER TIMER CONTROL



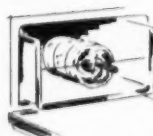
Automatically times and turns off gas on the top burners! You can produce automatic meals on the top burners—stews, chili, chicken. You don't need to be there to watch them.

TRUE SMOKELESS BROILING



Completely smokeless broiling because only gas broils with the broiler door closed and the clean flame literally consumes the smoke before it can escape into the kitchen.

ROTISSERIE



Meat, fish, chicken with all the char-broil flavor of the outdoors done in the comfort and convenience of your own kitchen!

CLOCK CONTROL



Clock control turns gas on and off while you're away, cooks complete oven meals automatically, gives housewives hours of extra free time.

AUTOMATIC MEAT THERMOMETER



No more peering, this really automatic meat thermometer turns the oven off when the meat is done the way you want it! You just dial to the doneness wanted and shut the door!

SPEED BURNERS



Gas reacts instantly to your command. Instantly turns to high heat, instantly shuts off, instantly clicks down to a true simmer. Not a moment lost in warm-up time, the amazing flexibility of gas gives you a complete range of heats instantly.

BUILT-IN GRIDDLE



Thermostatically controlled so it gives perfect hot cakes every time, tender eggs, crisp bacon because the temperature is always just right.



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Why be taken by surprise when you can be assured? The way to know that you will always obtain year-around deliveries of top-quality LP-Gas at a competitive price is to become a customer of the Sid Richardson Gasoline Co.

Because of our independence from company-owned or controlled wholesale or retail outlets we are in position to help our customers. We offer you a contract which protects your vital source of profit—your supply of LP-Gas—the "life blood" of your business.

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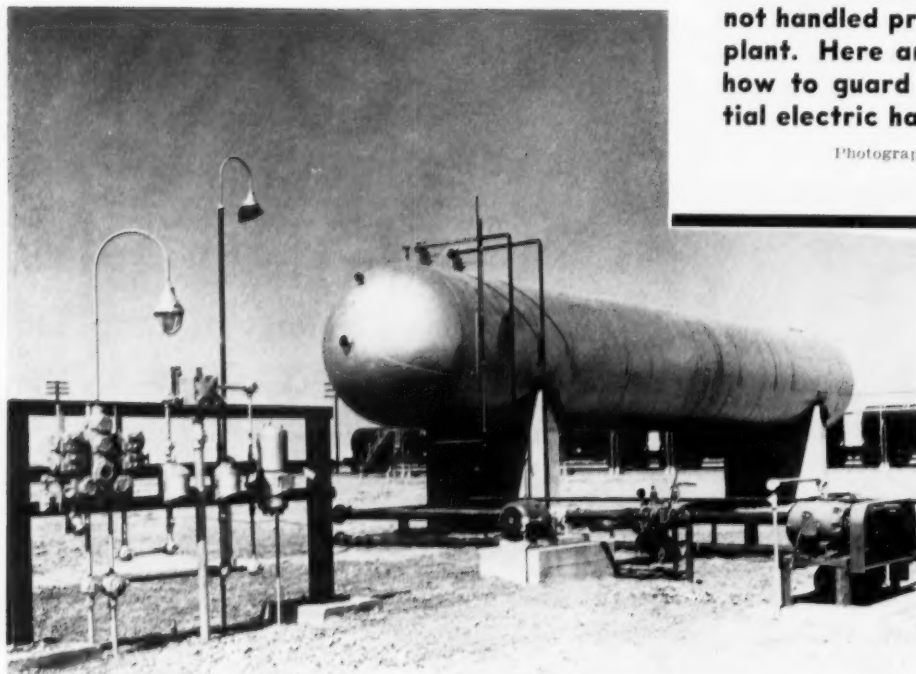
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Electricity is high on the list of fire causes issued by the National Fire Protection Association. It can be dangerous if not handled properly in a bulk plant. Here are some tips on how to guard against potential electric hazards.

Photographs and diagrams courtesy Crouse-Hinds Co.



How to keep electricity safe in a bulk plant

GREAT confusion exists regarding the intent of paragraph B.16(a) of NFPA Pamphlet 58. This paragraph is supposed to define the areas in which the Class I, Group D hazardous locations exist within the bulk plant and in which locations explosion-proof motors and switches are required. Work is now under way to clarify this paragraph as the existing wording definitely does not say what it means.

If reworded as follows, the intent would be clear: "All electrical equipment in pump houses, cylinder filling rooms, or other similar locations, and in vaporizer houses except those housing direct-fired

vapors, shall be of the type approved for use in Class I, Group D hazardous locations of the National Electrical Code."

Class I hazardous locations are those in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures. Group D is merely a class designation of ignitable hydrocarbon vapors.

Electrical equipment which conforms to the National Electrical Code for these locations is in the category generally called "explosion proof." According to the Code, an explosion-proof electrical component is "enclosed in a case

which is capable of withstanding an explosion of a specified gas or vapor which may occur within it, and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes or explosions of the gas or vapor within."

Further explanation of explosion-proof electrical units is offered by engineers of the Crouse-Hinds Co., one of the leading manufacturers in that field. They explained that the enclosures for such devices must meet two conditions to win approval of Underwriters' Laboratories; (1) withstand a hydrostatic test four times the explosion pressure, and (2) be flame tight.

Much depends upon the shape of the enclosure and the turbulence of the gas as it explodes. In a moderately sized junction box, the explosion pressure may be as much as 125 psi. Four times that is 500 psi, which is quite a lot of pressure. It is easier to provide the necessary strength if

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a warm spring, Perry?"*

*"Warm? it'll be hot...
the hottest spring ever for
Cities Service Distributors, Barry"*



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Cities Service will help you spark your sales with engineering assistance for carburetion conversions and all types of LPG installations.

Cities Service will also offer expert, over-all business assistance to keep spring sales soaring.

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Cities Service operates no retail outlets. Our entire job will be to serve you.

For the best spring—the best summer, fall and winter you've ever had—sign up with Cities Service! Call or write the nearest office below.

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these enclosures are cylindrical-shaped with spherical ends.

Besides the strength to withstand an endless number of internal explosions, Class I electrical equipment requires joints which can keep flames resulting from explosions from seeping outside the enclosure to the gas-laden air. This latter duty is called flame-tightness. Flameproof joints are large enough to enable gases or vapors to enter the enclosure but are long and wide enough to prevent explosive flames from leaving it—other than as cooled exhaust gases. Either metal to metal or glass to metal joints are allowed by Underwriters' Laboratories.

Flat joints for small explosion-proof enclosures such as might contain an ordinary toggle or pushbutton switch may have a minimum flat joint width of $\frac{3}{8}$ in. provided a feeler gauge .0015 in. in thickness cannot be inserted more than $\frac{1}{4}$ in. at any point when cover and body are assembled. Thus, the cover and body must be flat within one-half of .0015 in. or .00075 in. (See Fig. 1) While somewhat greater clearances are permitted on wider joints, none are so great that flametightness will not be destroyed by careless handling.

Threaded joint covers have a design advantage over flat joints in that explosion pressure actually increases the length of the flame path. (See Fig. 2) When an explosion occurs the cover threads are thereby compelling the expanding gas to escape through the helical channel which exists between the crests and valleys of the male and female threads. Another merit of threaded joints is that they are less easily damaged, and if damaged, they advertise the fact, since the covers cannot be screwed to the bodies easily.

In order to prevent the travel of explosive conditions through the conduit, seals are placed near all arcing devices such as switches, motor starters, and circuit breakers and where the conduits leave Class I location and enter locations of lesser hazards. Seals are threaded fittings which, after wiring has been installed, are filled with a special cement-like compound that hardens and

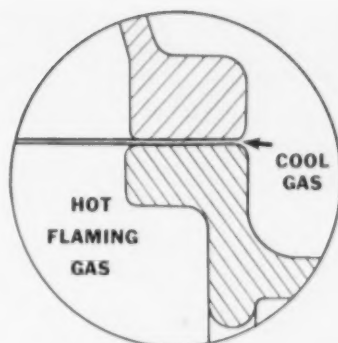
prevents the passage of gases or vapors thereby confining the explosions to the arcing areas.

Even the simplest bulk plant has at least three basic work areas that require Class I, Group D electrical apparatus. These are the pump or compressor, the cylinder filling room, and the loading and unloading connection areas.

Pamphlet 58 requires the separation of these areas and their isolation from other property. Filling rooms, pumps and compressors, and connections for loading or unloading tank trucks within the premises must therefore be at least 10 ft from one another and 25 ft from adjoining property lines. In addition, pumps and compressors must be at least 25 ft from ignition sources.

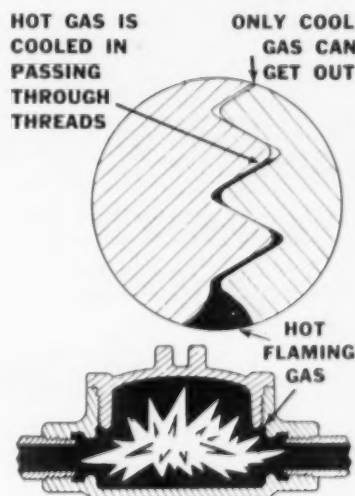
Any electrical equipment within these immediate areas must conform to the Class I, Group D code requirements. This includes not only the electrical equipment directly connected with the transfer operations, but also any switches, motors, junction boxes, or any other equipment required for the operation of ventilating equipment or any other electrical apparatus in those areas.

Since arcing takes place at any switches, relays, or motor brushes in the electrical system, these contacts require periodical maintenance. In opening up the explosion-proof cases to replace or smooth up these contacts, great care should be taken not to damage the contact surfaces of the cases. It is absolutely necessary that the small clearances in these joints shall be maintained in perfect condition.



GROUND JOINT OPENING

Fig. 1.



THREADED JOINT OPENING

Fig. 2.

Working in a L.P. gas plant can be just as safe as working in a bank or office, but it takes constant care in connection with arcs, flames, or other sources of ignition to keep it that way. ■



Safeguards against electrical hazards are required in cylinder filling rooms, too. This is a typical installation.



Delaware LP Dealer Reports...

GENERAL ELECTRIC TWO-WAY RADIO LIVES UP TO REPUTATION FOR SAVING MONEY

**Cahall Gas Service Company
of Harrington finds two-way radio
does save miles of backtracking
and hours of overtime**

When Cahall Gas Service Co. first considered the use of two-way radio on their LP delivery trucks, they were told they could expect radio-equipped trucks to travel fewer miles and provide better service to their customers than trucks without radio. They were told less overtime would be required to service those customers phoning for rush deliveries of gas.

Six months after they installed General Electric two-way radios on four trucks, Mr. Cahall reported these promises did come true. Rush calls for gas can be handled by radio-equipped trucks almost without interrupting their regular routes. Backtracking has been largely eliminated, and never does a customer have to wait hours for gas. Now trucks can be contacted immediately from the office and do not need to return or make expensive long distance

phone calls to learn of rush orders. Overtime is eliminated because radio-equipped trucks need not go back on the road after they have completed their regular routes.

Mr. Cahall was also told that General Electric Progress Line was the most dependable and economically maintained two-way radio available. Only General Electric mobile radio supplies as standard equipment such items as controlled reluctance microphones for high fidelity reception, and 6600 series pre-tested communication-type tubes and individual

plug-in chassis for long life dependability and low cost maintenance.

"Our experience proves that General Electric Progress Line two-way radio lives up to all its reputation," says Mr. Cahall.



You, too, can gain all the best advantages of two-way radio by investigating the General Electric Progress Line. Broad plans for financing or leasing are available to help you.



FOR SALES AND SERVICE see "Radio Communication Equipment" in your Yellow Pages. Or, write: General Electric Co., Communication Equipment, Section C947, Electronics Park, Syracuse, N.Y. In Canada: C.G.E. Electronics, 181 Lansdowne Ave., Toronto.

Progress Is Our Most Important Product

GENERAL  ELECTRIC

By J. ARTHUR THOMPSON

THOUSANDS of people each year throng to the Red Rocks Theater, an open air natural bowl surrounded by gigantic outcroppings of red sandstone, located in the Denver National Parks near Morrison, Colo. There, on a concrete stage built at the bottom of the bowl, is enacted outstanding musical productions, pageants and dramas all aimed at thrilling the vast audiences.

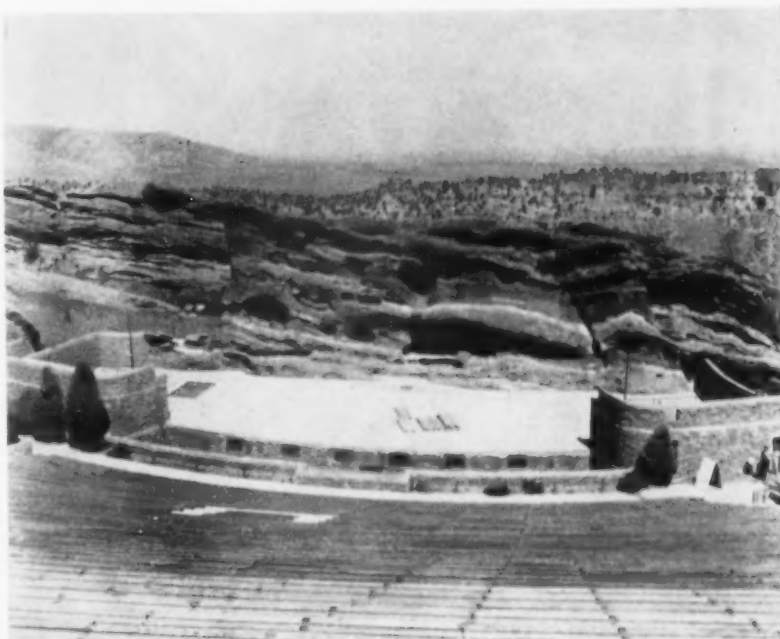
Few of those who come to see and hear these performances realize that in the event of all-out war, real life drama would be enacted *underneath* this stage, a drama that would involve them and their families in matters of life or death. For beneath the huge concrete stage, besides the usual dressing rooms and theatrical storage spaces, are the emergency headquarters of metropolitan Denver's Civil Defense Organization.

Fewer still would ever realize the part that L. P. gas might play if these headquarters ever go into operation.

The Golden Gas Co., situated between Denver and Golden, Colo., has had its hand in the building of these facilities from the first. Ernie Knutzen, president and manager of the LPG dealership, has personally overseen installation of all of the gas equipment and has even aided and advised in matters of other equipment. All ductwork and conduit was installed by Golden Gas.

For personnel to function efficiently, heat must be available. This is furnished by a propane fired 555,000 Btu Mars Hot Air furnace. Heat is conveyed to the rooms through overhead ducts.

In the event power lines are cut, as they probably would be should bombing occur, propane will take over by powering two standby generators which will furnish power for lights and for radios which will connect these headquarters with the outside world. The generator power would also supply water by energizing the electric water pumps.



The Red Rocks Theater, 12 miles from Denver, Colo., is the scene of cultural activities from musicals to drama, but may play a real life drama in event of a bomb attack.

Denver civil defense depends on L. P. gas



Underneath the concrete stage of the Red Rocks Theater is the headquarters from which Civil Defense personnel would operate in event of emergency. Propane would play a starring role.



Ernie Knutzen (left), president and manager of Golden Gas Co., keeps close tab on the Civil Defense Headquarters L. P. gas supply. The fuel is kept in a 1000 gal. underground tank. All gas lines are buried.

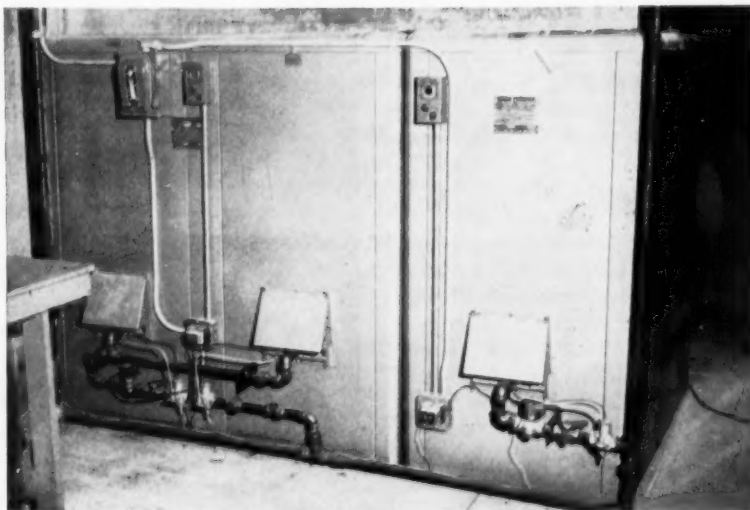
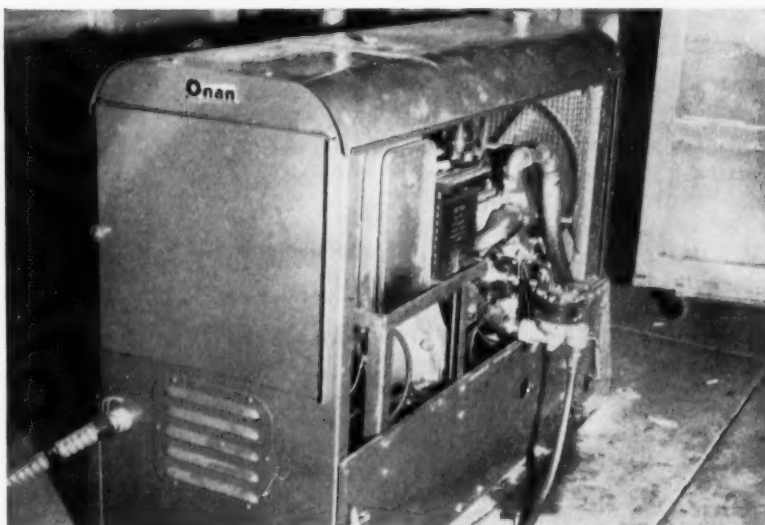
One generator is an Onan 5000 watt and the other is a Universal 28,000 watt. Engines on both are equipped with Ensign combination propane and gasoline carburetors. Both are connected to the propane line so as to be ready for instant use. They exhaust to the open air.

Food will be prepared on a four-burner propane kitchen range located in the furnace room.

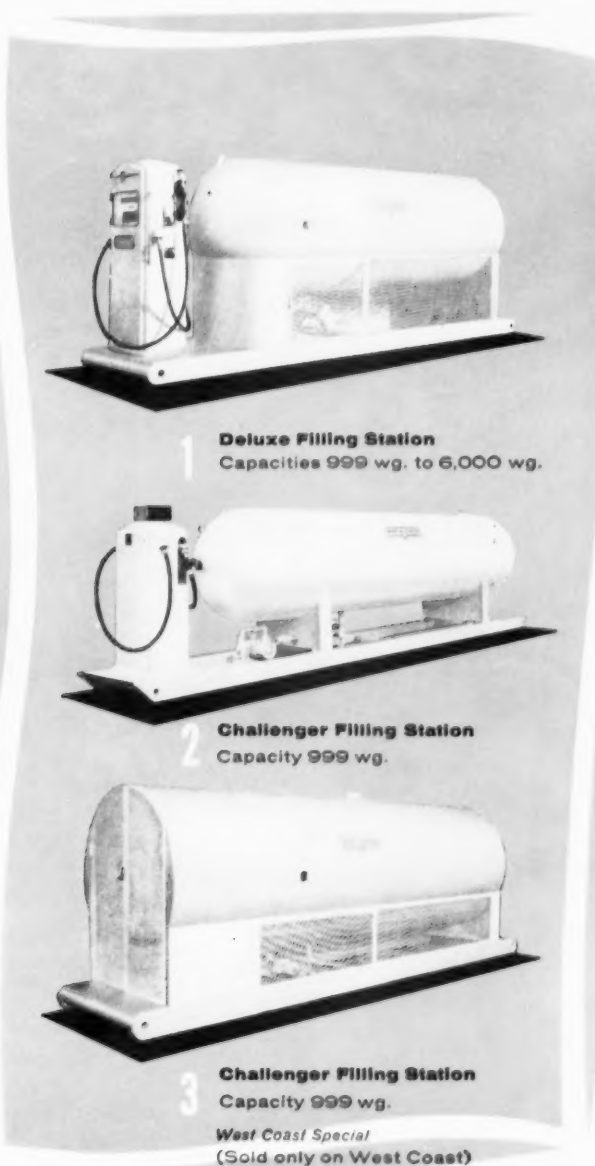
Fuel for the LPG installation is stored in a 1000 gal. underground tank some distance from the stage entrance. All lines are buried and the top of the tank is about 3 ft below the earth's surface, giving maximum protection to the installation.

The Civil Defense Headquarters is not just another installation and another customer to Knutzen. He has conscientiously given of his time, his knowledge, and his efforts to make this one of the best Civil Defense headquarters in the nation. It is part of his contribution toward his community's safety. Although it is hoped that the time may never come, there might be a day when the people of Denver will owe their lives to LPG dealer Ernie Knutzen and to his product, L. P. gas. ■

Forced air heat is provided by a 55,000 Btu L. P. gas-fired furnace. Also located in the furnace room: an LPG-fired gas range for food preparation.



3 ways to boost SUMMER PROFITS



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Last year motor fuel demand jumped 30% , to 850 million gallons*! Thousands of new trucks from leading manufacturers are coming from the factory LP-Gas equipped. Many major fleets are converting existing equipment. Taxis, buses, and industrial lift equipment are changing over to LP-Gas. This new market needs a convenient, dependable fuel service. Many users have already installed their own filling stations or made fuel arrangements with LP-Gas Filling Station-equipped dealers operating along their routes.

Now is the time for you to beat the Summer Slump in LP-Gas sales . . . by joining the forward looking dealers selling this LP-Gas motor fuel market. It is changing . . . expanding . . . yielding excellent profits. A Beaird LP-Gas filling station will be a profitable addition to your business, too.

Ask your Beaird representative how your filling station can pay for itself with Beaird's new long-term financing plan.

Why wait for the Summer Slump???

Write today.

*Estimated gallonage based on major oil company reports.

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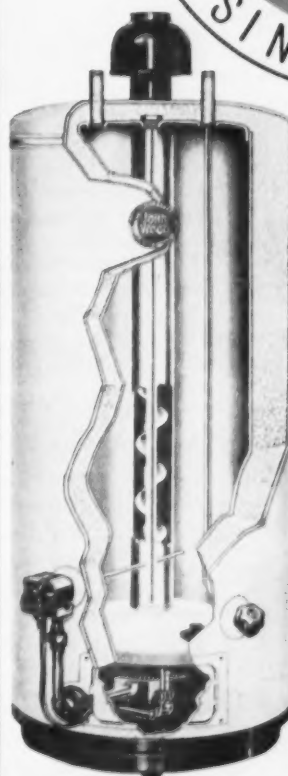
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This 258,000-gallon-capacity plant is Northwest Hydrogas Company's answer to winter supply protection for their customers. Tanks and engineering by United.

PLAN AHEAD for PLANT EXPANSION!

Likely to need more storage in next 12 months? NOW IS THE TIME to order for Summer or later delivery.

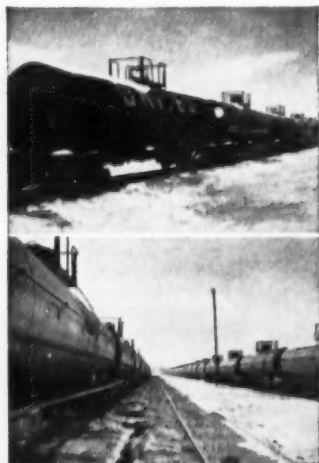
The continuing steel shortage counsels long-range planning for bulk storage requirements. We are now booking for Summer and Fall '57 delivery.

Foresighted operators know that ample storage at their plant site is just as essential now as it has always been. Underground storage facilities in Texas still can't solve a Northern midwinter crisis.

And Count on United for Help

Whatever your need in bulk plant planning, United has the experience to match it. Design, engineering, supervision of installation, tank construction, facilities planning—we'll handle any or all of it for you.

Our 18,000- and 30,000-gal. tanks are made to the highest standards in the industry, meet every state requirement. They're grit-blasted, X-rayed, stress-relieved, and delivered the way you want 'em, for years and years of trouble-free service.



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news



LPG storage and fuel dispensing facilities installed for Carnation

The Carnation Co. recently installed a 10,000-gal. water capacity vertical storage tank at its ice cream plant in Los Angeles to provide fuel storage and handling facilities for more than 100 trucks operating on L. P. gas. In conjunction with the tank, a modern fuel dispensing system and island was also part of the installation engineered and installed by American Liquid Gas Corp., Los Angeles.

The plant where this installation was made is headquarters for 250 milk and ice cream delivery trucks, 100 of which are operating on L. P. gas and consuming approximately 17,000 gal. of fuel each month. Plans are now underway for conversion of many additional gasoline operated trucks to LPG.

The storage tank, a 10,000 gal. water capacity vessel, is supported by a concrete foundation and steel skirt. The skirting is insulated with 3 in. of 85 magnesia and plaster to resist damage in event of fire. The steel tank, steel skirt support and the concrete founda-

tion have been designed to withstand earthquake shocks.

The storage tank and dispensing pump are enclosed by a 6-ft high chain link fence and a heavy steel guard rail to prevent damage to tank or piping by moving vehicles. Two Squibb-Taylor magnetic gauges calibrated in feet of fluid indicate the exact depth of fluid and permit gauging of the tank by direct reading of the dials.

The L. P. gas is moved from the tank through underground lines to the meter on the dispensing island by means of a Smith Precision Products Co., MC-2 L. P. gas pump. The pump motor is started and stopped by a switch at the meter. Another switch near the pump is also provided for emergency use. The underground lines are wrapped and coated in accordance with city regulations and a "holiday" test was applied to determine that the coating was continuous and without flaws before the pipe was covered.

The dispensing island provides facilities for dispensing both L. P.



This vertical vessel recently installed at the Carnation Co. provides for 10,000 gal. capacity storage for L. P. gas. Gauging of the tank is done by direct reading of the dials shown which report the calibration of feet of fluid in the tank.

gas and gasoline. A feature of the L. P. gas dispensing meter is a spring operated shut-off valve located below the top level of the concrete island. This valve is held open by an easily tripped lever and fusible link. Although the island is guarded by heavy posts set in concrete with rails between them, a vehicle accidentally striking the meter or meter stand will trip the lever and automatically close the valve preventing loss of fuel in the lines between the tank and meter. The purpose of the fusible link is in case of fire at the meter. If a fire occurred the fusible link, which has a melting point of 200° F. will melt and the valve will close automatically.

The installation which is located near downtown Los Angeles has been inspected and approved both as to engineering and construction by officials of the fire department and building engineering department. American Liquid Gas Corp. has installed several similar plants of various sizes throughout the country for the same service.

AMA schedules seminars for small business

A group of meetings for small business are scheduled for this spring by the American Management Association. The association will hold a number of seminars and a large-scale conference, all design-



Dispensing of L. P. gas to a fleet of more than 100 delivery trucks is now part of the daily operation at Carnation Co. in Los Angeles.

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- VENTED—YET NEEDS NO VENT
- TAKES NO OXYGEN FROM ROOM
- TAKES UP NO FLOOR SPACE
- COMPLETELY AUTOMATIC
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HUNT HEATER CORPORATION

220-BP 12th Avenue, N.

Nashville 4, Tennessee

Please send me complete information and prices on the HUNT NOVENT HEATER.

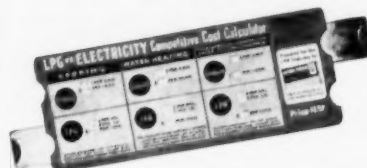
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ADDRESS _____

CITY _____ STATE _____

(Advertisement)

**You'll close more
appliance sales
when you use
this handy . . .
COMPETITIVE
COST CALCULATOR**



Now . . . with this authoritative, convincing sales tool, you can prove to your prospects *quickly, easily, and simply* that LPG costs less than electricity for cooking and water heating. Money talks with most people, so *dramatize the savings* with a Competitive Cost Calculator.

Compares the average annual cost of operating LPG versus electrical appliances, using your own local rates.

Proves to your customers' satisfaction that it's less expensive to cook and heat water with LPG than with electricity.

It's authoritative! Average annual usage figures for both LPG and electricity are taken from Technical Bulletin 1073 prepared by the U. S. Department of Agriculture. It will last for years. Made from durable plastic-laminated board.

LPG OPERATORS —

The Competitive Cost Calculator builds fuel sales as it builds appliance sales. Hundreds of LPG appliance salesmen are using the Calculator to add authority to their sales presentations. Be sure each of your salesmen has one with him on every call.

\$1.00 each

Orders of 50 to 99—80¢ ea.

Orders of 100 or more—70¢ ea.

(In California add 4% Sales Tax)

*The supply is limited,
so order today!*

Butane-Propane News

198 S. ALVARADO STREET
LOS ANGELES 57, CALIF.

HIGHER PAYLOADS

GREATER SAFETY

LONGER LIFE

result from these **LMC** features:



LMC Gasoline Transport

Available in High Tensile Steel, Aluminum, or Stainless Steel

Because Lubbock Machine specializes in the manufacture of transport tanks, you'll find there's an LMC Unit that means Low Mileage Cost . . . whether you're hauling LP Gas, Gasoline, Natural Gas, Chemicals, or Anhydrous Ammonia.

**LUBBOCK MACHINE
& SUPPLY COMPANY**

P.O. DRAWER 1589 PO 2-5261

LUBBOCK, TEXAS



NECKDOWN DESIGN

The neckdown or offset design of the LMC transport gives you a low center of gravity which results in better roadability and easier driving.

HEMISPHERE HEAD

With its hemisphere or rounded-off head, the LMC Transport Tank can be moved in closer to the cab, which permits more front end loading when desired.

VAPOR TIGHT

Because the LMC is vapor tight, there's no fumes, which means considerably less fire hazard. Also, because there is no evaporation or shrinkage, you have a more economical unit.

COMBINATION RELIEF VALVE

Illustrated at left is the LMC combination pressure and vacuum relief valve. This valve, designed by Lubbock Machine engineers, automatically protects your tank against excess pressures and vacuum under all conditions . . . it is an exclusive feature of LMC Transport Tanks.

**LMC units are
LOW MOUNTED for**

HIGH PAYLOADS



The Rockwood Dualsteel Union was made especially to handle highly corrosive material

There's nothing to worry about
It's a ROCKWOOD DUALSTEEL UNION!

Rockwood's Dualsteel Unions stand up to wrench abuse and overcome galling. The reason — Dualsteel's greater Brinell hardness.

Rockwood Dualsteel Unions are made of a new special alloy steel. This special alloy steel cannot be welded, it's tougher, more resistant to corrosion. Straight waterway eliminates corrosion and erosion at seat joint. You get greater strength without bulk!

The entire union is completely "Rockwoodized", the threads being protected by "Rockwoodizing" after having been machined. This process plus the special alloy make the Dual-

steel Union ideal for the handling of corrosive material.

But there are even more reasons why Rockwood Dualsteel Unions are what you're looking for. All Dualsteel Unions are individually air tested under fluid. Their ultimate strength is 85,000 pounds per square inch.

If you want a union that will resist corrosion and overcome galling . . . a union that has more advantages — and none of the weakness of solid steel constructed unions — you want Rockwood's Dualsteel Unions.

For complete information fill in the coupon below. We'll send all the data.



ROCKWOOD SPRINKLER COMPANY
 1411 Harlow Street
 Worcester 5, Mass.

Please send me prices and further data on the Rockwood Dualsteel Unions.

Name

Title

Company

City Zone .. State

ROCKWOOD SPRINKLER COMPANY

Distributors in all principal industrial areas

ed to meet the specific management educational needs of smaller firms.

Smaller companies, the AMA points out in its announcement of the new program, have unique management problems calling for a particular approach to company organization, operation, and policies—an approach that differs in content though not in method from that used by larger firms.

Most of the seminars are intended for top executives and others in the general management field, although there will also be seminars for financial, marketing, office, and research and development managers. The conference will deal with product development in medium-sized and smaller organizations.

For general management executives the AMA plans orientation seminars, two- to six-day classroom-style meetings for review of or practice in a management specialty. All will be held at AMA headquarters in the Sheraton-Astor hotel, New York, N. Y. Dates include April 17-19, April 29-May 1, May 1-3, May 13-15, and June 10-12. They will cover management of the small company; planning and controlling growth in the small company; and top management organization of production, sales, finance, and research and development in the small company.

Research and development workshop seminars for small and medium sized firms will meet at AMA headquarters May 6-8 and June 3-5. Subjects will include administering product programs, long-range planning, and selection and training of technical personnel in smaller organizations.

A specialized workshop seminar on selling problems of small business will be April 24-26 at AMA headquarters.

Trend toward automation in kitchens growing

Automation appears to be well established in the nation's auto-driving habits and appliance preferences.

Latest evidence of the swing to automation in the home came recently with an announcement by Servel Inc., that approximately three out of every four of its family-size gas refrigerators sold in 1956 were equipped with automatic ice makers.

John H. Wall, executive vice president and general manager of Servel Inc., revealed that consumer



preference for the automatic ice maker has climbed steadily. In each of the past four years, he said, Servel gas refrigerator models equipped with the ice maker have far outsold models that were not equipped with it.

Automation in the kitchen has caught on even more rapidly than automatic developments in the automotive industry. The automatic transmission developed by one of the largest auto companies was installed in only 18½ per cent of the cars delivered during the first year it was available.

In the first year that another company offered power steering, only 14 per cent of the car owners who had a choice actually bought it. Power brakes were purchased by less than nine per cent during their first year.

Vining resigns from White; purchases Winstrom Sales

A. D. Vining, who just resigned as vice president in charge of sales of White Products., Middleville, Mich., announced the purchase of W. F. Winstrom Sales, Holland, Mich.

Winstrom Sales distributes the full Gibson line of appliances, Barton washers and dryers, Vesta stoves, as well as White automatic water heaters and water softeners in western Michigan. The distributorship was founded in 1929.

Mr. Vining announced that the present sales organization at Winstrom would remain intact and that W. F. Winstrom would continue to be actively affiliated with the sales organization.

Mr. Vining was appointed sales manager of White Products in 1948 and since then has held the titles of general sales manager, vice president and general manager, and vice president in charge of operations.

Officials and representatives from Memphis, East St. Louis, Des Moines and Tulsa attended Anco Manufacturing & Supply Co.'s annual sales meeting in the company's home sales office in Tulsa on February 7-9. The meeting was held to discuss the current steel situation, the market outlook for 1957, and to view Anco's new LPG and anhydrous ammonia equipment.

L. P. gas leader attends National Resources meet

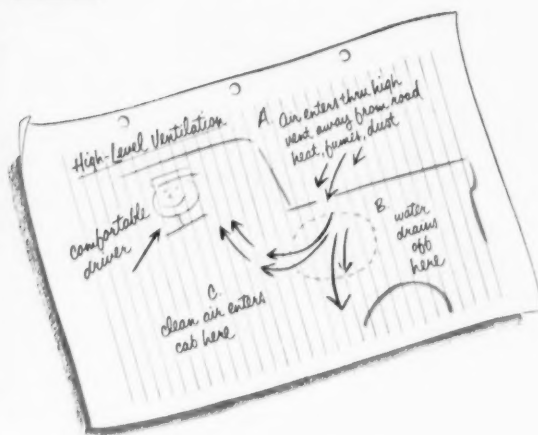
Harold W. Smith, president of American Liquid Gas Corp., Los Angeles, accepted an invitation to participate in a recent National Resources Conference held in Ventura, Calif. Realizing the importance that the L. P. gas industry could play in serving national defense and the country's economy in the event of an all out war or major emergency, prompted Mr. Smith to accept the invitation.

The conference which is given by the Industrial College of the Armed Forces is designed to present a condensed version of the full ten months course generally given in Washington, D. C. Participants include active and reserve officers of the Army, Navy, Air Force, Marine Corps; officers in the National Guard and selected civilians in the fields of industry, education, labor and civic life. It is a broad presentation which highlights the interrelated civilian-military, economic problems necessary in mobilizing the country's resources for National Security.

Mr. Smith's decision to participate in the conference was based upon the feeling that his company should be fully informed of the best ways and means in which it could be of service to the nation in the event of a national emergency. Mr. Smith stated that his company realizes that the conservation of gasoline and distillate



in a Chevy cab,
even the
air is better!



... more evidence that **Chevrolet Task-Force Trucks** are engineered better and built better for bigger savings!

These cab features give you extra comfort and safety behind the wheel, extra savings on truck maintenance. And they're proof that the most modern trucks for your money are Chevrolets!

The drawing "doodled" above shows how Chevy's High-Level ventilation provides a comfortable interior . . . and the numbers in the big picture point out other advantages equally as good to have around you when you haul! They include:

- ① A roof that's specially built for safer, more comfortable hauling. Sturdy all-steel construction adds to safety; roof's unique inner reinforcement insulates the overhead against heat.
- ② A gleaming, durable baked enamel outside finish. Here's the reason your Chevy's exterior will resist wear better, look like new longer! This handsome finish is available in a wide variety of colors.
- ③ A Nu-Flex seat that beats the bumps! Deep-comfort coil springs, metered air shock damping and 3-way adjustment let you take it easy on tough jobs!

④ A cab that's rustproofed to last! Doors and similar surfaces are rustproofed on the inside as well as on the outside by immersion.

⑤ Concealed Safety Steps for convenience. Inside each cab door, they give you firmer footing, make entering or leaving the cab easier and safer.

⑥ An undercoated floor, cowl side panels and fender flanges. Virtually all exposed surfaces on the underside of the cab are protected by an anti-rust coating.

⑦ A non-glare instrument panel to make driving safer! The textured finish on upper portion of Chevy's instrument panel reduces blinding sun reflections, minimizes eyestrain.

⑧ A reliable 2-speed electric windshield wiper* on each side. Powered by electricity, their action remains constant under all conditions.

Such advantages as these (we've shown only a few) combine to make *everything* better in a 1957 Chevrolet truck! You'll see for yourself when you visit your Chevrolet dealer's. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

*Standard in Series 5-6-7-8-9-10000 models.

... biggest sellers because they're the biggest savers!

CHEVROLET

CHEVROLET TASK-FORCE 57 TRUCKS

fuels would be of utmost importance during a major war or other emergency and that L. P. gas which is now being used as an engine fuel in thousands of different applications could be further substituted to free billions of gallons of gasoline for vital defense purposes.

Mr. Smith emphasized the value of attendance at such conferences and suggested that other leaders in the L. P. gas industry throughout the country should make every effort to participate in similar regional conferences when they are scheduled in their particular areas.

Tappan Stove names winners in sales contest

Ross A. Sams, district manager, and Joseph S. Prewitt, territory manager, have been named top salesmen for 1956 in the "Top Ten" sales contest conducted by the Tappan Stove Co., Mansfield, Ohio, according to Arthur B. Ritzenthaler, vice president in charge of sales.

Mr. Sams, who was named a district manager in May handles the sales area covering northeastern Ohio, western Pennsylvania, and northern West Virginia with a staff of ten salesmen. He will receive a trophy and cash bonus award.

Mr. Prewitt finished first in the contest among the 100 Tappan territory managers. He will retain the "Top Ten" trophy for a year and receive a cash bonus award.

O'Connell is manager of American-Standard office

A new sales office for the Philadelphia district has been created by the plumbing and heating division of American-Standard, according to an announcement by D. J. Quinn, vice president, sales.

Mr. Quinn said that Brendan P. O'Connell, American-Standard salesman in Philadelphia for the past three years, has been appointed manager of the new district sales office. The Philadelphia district covers the trading area made up of northern Delaware, southeastern Pennsylvania, and southern New Jersey. William T. Reed, present district manager, will continue in that capacity.

Mr. O'Connell joined the plumbing and heating division in 1947. He served as a salesman in New York, Hartford, Conn., and Chicago before going to Philadelphia.

OPERATIONS OF PETROLANE GAS SERVICE INC.

	Nine months ended Sept. 30, 1956	Nine months ended Sept. 30, 1955
Sales and other revenue	\$5,937,218	\$4,853,921
Total net earnings	736,263	578,494
Net income after provision for federal taxes, minority interests and amortization of good will	373,387	298,383
Net earnings per share	72¢	63¢
Shares outstanding Sept. 30	517,500	470,000

Petrolane Gas Service reports increased profits

Petrolane Gas Service Inc., reported consolidated net income after taxes totaling \$373,387 for the nine months ended Sept. 30, 1956, representing 25 per cent gain over the corresponding period of the previous year.

Due to predominately heavy winter sales, the fourth quarter ending Dec. 31, 1956, should maintain if not exceed the percentage gain reflected in the nine month period ended Sept. 30, 1956, and earnings per share should therefore be materially greater than the \$1.17 earned per share for the twelve month period ended Dec. 31, 1955, according to the company.

Honeywell moves Midwest offices to Lincolnwood

A new building in Lincolnwood, Ill., a suburb just northwest of Chicago, will house Minneapolis-Honeywell's Midwest regional sales office and distribution center.

The new building has about 21,000 sq ft of floor space and is located on almost 100,000 sq ft of land. A large stock room occupies about one-third of the building. The other two-thirds includes a general office of 6500 sq ft, 18 private offices, a large conference room that can be used for meetings, a kitchen, an engineering

drafting room and rooms for demonstrations.

Facilities for Micro Switch, a division of Honeywell, also are included.

A humidity-controlled dual-duct system provides for year - round heating and cooling. The temperature in each office room in the building is controlled individually.

The air each office receives is mixed individually right above the office, depending on the thermostat adjustment, and then diffused downward through ceiling ducts. Exhaust ducts also mounted in the ceiling help keep air circulating constantly. For extra comfort in winter, a large radiant panel at the perimeter of the building overcomes the chilling effect of the walls.

K. R. Boyes, secretary of AGA, dies suddenly

Kurwin Robert Boyes, secretary of the American Gas Association since 1926, died suddenly January 30 at his home in New York City. His age was 60.

While attending Brown University from 1919 to 1923, Mr. Boyes also served as assistant to the pres-

The Midwest regional sales office and distribution center of Minneapolis-Honeywell Regulator Co. has been moved to this new building in Lincolnwood, Ill., a suburb northwest of Chicago.



ident of the Providence Gas Co. He joined the AGA in 1923 as assistant to the managing director and three years later was named secretary of the Association.

For a number of years he served as secretary of the personnel committee and the rate committee of AGA. He also was in charge of membership, which increased from 3000 to nearly 8000 while he was with the Association. In addition, he served as convention manager and directed the AGA library.

Mr. Boyes was a member of the American Management Association, American Chemical Society, American Trade Association Executives, and the Brown University Club of New York.

Conference will combine field and lab findings

Heating and air conditioning data gathered in the laboratory and in the field will be brought together at an Institute for Environmental Control being planned for the West Coast this fall.

Field information will be supplied by members of the Institute of Heating & Air Conditioning Industries while laboratory findings will come from the University of California at Los Angeles' School of Engineering. The conference will be sponsored by both groups.

R. E. Harkens, managing director of the Institute of Heating & Air Conditioning Industries, is in charge of plans. Dr. L. M. K. Boelter, dean of the UCLA School of Engineering, will deliver the keynote address.

Illinois site of 400,000 gallon AA storage plant

A 400,000 gal. distributing plant has recently been completed at North Pekin, Ill., for the storage of anhydrous ammonia. The plant consists of 16-30,000 gal. tanks manifolded together. It will be used as a distributing plant serving an area of several states in the corn belt.

The installation was made for Mid-South Chemical Corp., one of the large producers of AA. The product will be transported in barges from the company's manufacturing plants, for distribution by rail cars and motor transports to the company's dealers.

Barges are unloaded at the rate of 1000 gpm through 3600 ft of 8 in. pipe connecting the plant with the dock on the Illinois River. Va-



por return line is 4 in. Transfer is accomplished by means of a Fuller B-120H rotary compressor driven by a 100 hp motor through a Lufkin gear reducer. The plant is designed so supplies may also be received from tank cars or transports.

Loading out into tank cars or transports either singly or in multiple is accomplished with two Smith 150 gpm pumps and one Smith 100 gpm pump. These are equipped with reversible motors so they may pump either to or from the rail and highway transport equipment. The plant can load one transport or rail car at 300 gpm, two simultaneously at 200 gpm, and three simultaneously at 130 gpm. The plant has been planned for operation with minimum manpower, with centralized control panel and Orbit quick-acting full flow valves. Extensive use was made of welded and flanged steel piping.

The plant was designed and installed by Roney Inc., Dallas, Texas.

American-Standard offers good management program

A new business management program is being offered to plumbing, heating and air conditioning contractors by the plumbing and heating division of American-Standard.

Included in the program is a new motion picture entitled, "Your Witness," which points up many of the business management problems encountered by contractors. The film covers such subjects as the keeping of adequate records, discounting of bills, product pricing, overhead control and the maintenance of sufficient profit margins. A series of "witnesses" review these problems, always stressing the fact that industry assistance is available where needed.

Following the motion picture, aid to contractors will be extended by

This plant, located in the heart of a large agricultural area in Illinois, will supply the fast growing demand for anhydrous ammonia as a fertilizer.

American-Standard in the form of "packaged" business management clinics, each one complete with plans, booklets and other necessary working materials.

The new motion picture is a black and white, 16 millimeter sound film which runs for 21 minutes. Prints of the film will be made available through American-Standard sales offices for showings to local contractor meetings or meetings held by individual distributors for their customers.

Coast-to-coast telecast promotes gas appliances

Automatic gas water heaters and the national \$216,000 Gas Magic Home Laundry Contest were featured in a coast-to-coast telecast on March 17.

The Alcoa Hour, which has 23 million potential viewers over 103 NBC stations, presented a full-length commercial on these two subjects: The Ruud Alcoa Alloy duo-temp automatic gas water heater and the Home Laundry Contest, the latter being sponsored by the American Gas Association and the Colgate-Palmolive Co.

James B. Clow announces new product line

G. R. Kinnally, general manager of James B. Clow & Sons Inc., Chicago, Ill., announces the company has recently taken on a new air conditioning line of products to be manufactured and supplied by the Day & Night Manufacturing Co., Monrovia, Calif.

The new units will consist of a complete line of residential and light commercial air conditioning equipment, of both remote-type air-



YOU CAN'T KEEP CUSTOMERS WAITING!

**NO SUPPLY PROBLEM FOR TEXACO LP-GAS DISTRIBUTORS.
CONSTANT SOURCE OF SUPPLY ASSURES ON-TIME DELIVERIES!**

Don't wait...call or write TEXACO now

The Texas Company is not only one of the largest producers of LP-Gas, it's the only petroleum company to successfully build up distribution of its fine products in all 48 states.

As a Texaco LP-Gas distributor, you will benefit by profitable and *proved* sales policies. You're assured of dependable and efficient delivery service and the highest quality product. Also, *Texaco markets only through independent distributors.*

We deliver Texaco LP-Gas in a new fleet of tank cars, from 25 strategically located production areas.

Current distributors say Texaco LP-Gas has *immediate acceptance* — because it carries the nationally-known trade-mark, Texaco, and matches in quality other *accepted* Texaco products such as Sky Chief and Fire Chief gasolines, Marfak, Havoline Motor Oil, and many others.

No reason why *you* can't build a sound, profitable business with Texaco LP-Gas. We'll be glad to tell you how.



The Texas Company, LPG Sales Division, P. O. Box 2420, Philtower Building, Tulsa 2, Oklahoma, DIamond 3-4101. — 929 South Broadway, Los Angeles 15, California, TRinity 9271.





**"I like to work with Reznor duct furnaces,
because they let me give my customers
exactly what they want and need"**

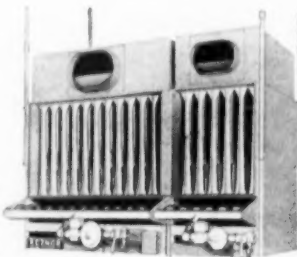
"There's no getting around it; selling anything is a lot easier when the product is exactly right. That's why I like Reznor duct furnaces. With one of the Reznor duct furnaces as a starting point, I can offer each one of my customers the heating or heating-cooling system which is exactly right for his building and his needs.

"There are duct furnaces in the Reznor line for system capacities from 50,000 to several million BTU. All are simply compact, efficient gas-fired heat exchangers with a full complement of combustion controls. I can take any one of them and add whatever I feel is necessary in the way of equipment for air moving, cooling, filtering, and humidifying. My hands aren't tied because some manufacturer has put together a complete package which can't be exactly right for any job because it has to be good enough for many different jobs.

"Satisfied customers are my best salesmen. So whenever I complete an installation designed around a Reznor duct furnace, it's just like adding a star salesman to the payroll. I know it will win friends for me, because the Reznor duct furnace gave me the freedom to tailor the system to exact job requirements."



It's the same story wherever you go. Reznor duct furnaces are winning friends among contractors and their customers because they pave the way for truly ideal heating and heating-cooling installations. For the complete story, see your nearby Reznor distributor. He's listed under "Heaters-Unit" in the yellow pages of your telephone directory.





REZNOR
THE WORLD'S LARGEST-SELLING
GAS UNIT **HEATERS**
REZNOR MANUFACTURING COMPANY
4 Union Street, Mercer, Pa.

cooled and self-contained air-cooled designs.

A. J. Horn, general sales manager for Day & Night, stated that this "new distribution association in the Chicago region should mark a major step in the advance of air conditioning sales for Day & Night and for our new distributor."

Lester L. Luxon speaks before safety engineers

Lester L. Luxon, vice president of the gas plant division of American Liquid Gas Corp. and technical editor of BUTANE-PROPANE News, addressed a group of more than 200 safety engineers before a meeting of the industrial safety division of the California department of industrial relations, held at the Biltmore hotel in February.

Mr. Luxon presented a short resume on the history of L.P. gas, its properties and the methods of storage and handling. Pointing



Lester L. Luxon

out that the beginning of L.P. gas dates back more than 50 years, he briefly sketched its growth and gave some of the interesting highlights of its early developments as an opening to his talk.

Sharing the program with Mr. Luxon was William Richards, safety engineer of the Petrolane Corp., Long Beach, Calif. Speaking wholly on the subject of safety of L.P. gas, Mr. Richards gave a most graphic demonstration in which he furnished conclusive proof that L.P. gas when stored, handled and used in accordance with the various local and state codes governing it, is much safer than other fuels including gasoline.

L. P. Gas Control Board established for Arkansas

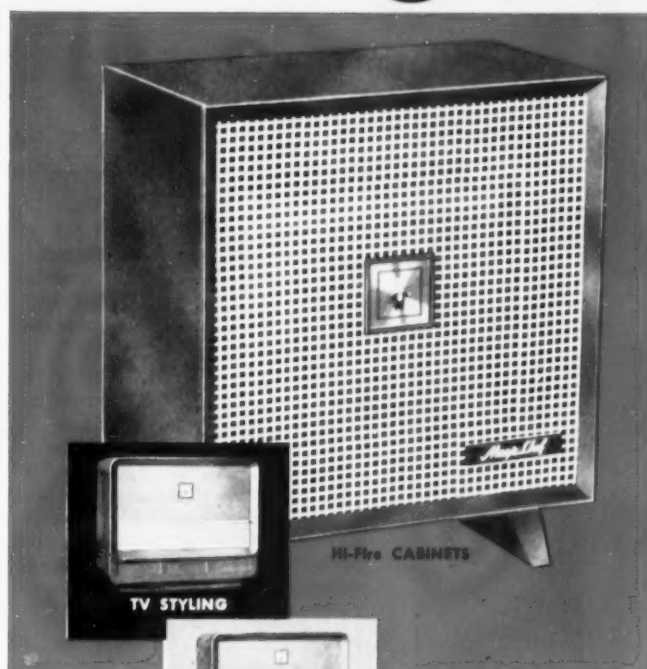
Arkansas has joined the ranks of states having L.P. Gas Control Boards. House Bill No. 87, creating the Arkansas control group, has been passed in both houses and approved by the governor.

GET LP CUSTOMERS

coming your way with

Magic Chef

GAS HOME HEATERS!



HI-Fire CABINETS

TV STYLING

RADIANT CONSOLES

Living room Looks

Why It's Easy to Sell Magic Chef Gas Home Heaters

- Pre-sold market (nationally advertised for over 25 years)!
- Complete line for all needs (vented, radiant, circulating, 15,000-70,000 BTU)!
- Tested merchandising aids!
- Smart modern styling!
- Long-life construction (with fewer service problems)!
- Pressurized 3-way heat flow assures customer satisfaction!
- Tested and approved by AGA



Thousands of prospects in your area are pre-sold on Magic Chef!

Profits PLUS for LP dealers! Profit when you sell the heater . . . profit when you sell more gas! And Magic Chef, most famous name in gas, is EASY to sell . . . because all America *knows* the name. Cash in on a pre-sold market with a feature-packed, complete heater line . . . and cash in on the industry's hottest purchase plan (including the Profit Protection Plan that assures your profits)! Pre-season discount . . . if you hurry!

cash in on this
Early Bird Special!
offer this regular \$2995



AUTOMATIC \$4.95 BLOWER only

*Build traffic!
Sell the Package!*

GET YOUR SHARE OF THE PROFITABLE LP GAS APPLIANCE MARKET!

MAGIC CHEF
AMERICA'S GREATEST
NAME IN GAS
RANGES, HEATERS,
AND COMMERCIAL
COOKING EQUIPMENT



MAIL THIS COUPON TODAY!

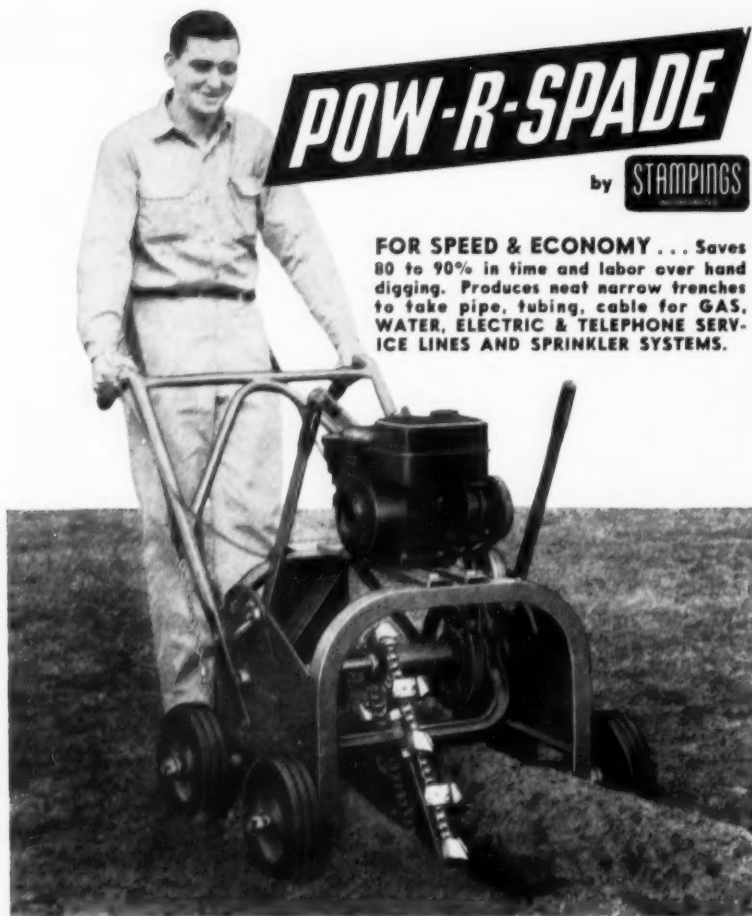
MAGIC CHEF, INC., Heater Sales Division, 4931 Daggett Ave., St. Louis 10, Mo.

Please send me further information on ☐ Heaters ☐ Ranges ☐ Commercial Equipment

Name

Store Store Address

City Zone State



POW-R-SPADE

by **STAMPINGS**

FOR SPEED & ECONOMY . . . Saves 80 to 90% in time and labor over hand digging. Produces neat narrow trenches to take pipe, tubing, cable for GAS, WATER, ELECTRIC & TELEPHONE SERVICE LINES AND SPRINKLER SYSTEMS.

POW-R-SPADE reduces man-hours to minutes!

A POW-R-SPADE user reports that one man and the POW-R-SPADE digs a trench in 40 minutes which under same conditions required 2 men 8 hours with hand spades. POW-R-SPADE is field tested and enthusiastically approved by hundreds of users. Shipped assembled, ready to go to work.

POW-R-SPADE digs a neat 3 in. wide trench to any depth from 1 in. to 24 in. Operated by one man from start to finish. This machine digs right up to foundation of buildings. No complicated set-up required. No ugly scars or wheel marks to mar lawns. Mail coupon for complete details.

POW-R-SPADE FOR BULK INSTALLATIONS



HOUSINGS FOR CYLINDER INSTALLATIONS

Recognized as the leader in the housing field, Stampings has supplied these popular units to dealers everywhere in the U.S. for over 17 years. Post and wall bracket models to meet every requirement. Mark coupon for catalog.

PRODUCTS OF **STAMPINGS** DAVENPORT, IOWA

Stampings, Inc. Davenport, Ia.

Please send me details on items checked below:

- ☐ Complete information on POW-R-SPADE
☐ New catalog on Stampings Housings

NAME _____

COMPANY _____

STREET _____

CITY _____

STATE _____

Utility sales show 8% increase in 1956

Total sales of the gas utility and pipeline industry to ultimate customers in 1956 were 8.2 per cent higher than in 1955, the American Gas Association reports. Natural gas sales gained 9 per cent while manufactured and mixed gas, because of the steady conversion from these types to natural, dropped 6.4 per cent.

Total gas sales for the year were 72,285 million therms compared with 66,834 million therms in 1955. Natural gas gained from 63,337 million to 69,012 million therms. Manufactured gas sales declined 27.7 per cent, from 457 to 331 million therms; mixed gas dropped 3.2 per cent, from 3039 to 2942 million.

NEWS NOTES

Carter Welding Supplies Ltd. has acquired the assets of the National Propane Co., Hamilton, Ont., Canada, and took over its operation February 1, Wilfred R. Carter, president, has announced.

In order to better serve its customers in southern California and Arizona, Linde Air Products Co. is establishing a warehouse in Phoenix at 401 E. Buchanan St., and one in San Diego at 1004 Morena Blvd. The addition of the two warehouses brings to 11 the number of Prest-O-Lite LPG cylinder warehouses.

Philco Corp., formerly an all electric manufacturer, has introduced two L. P. gas clothes dryers. The dryers are equipped with automatic pilots, safety door switch, and a switch that shuts off heat five minutes before cycle is completed so clothes are cool to handle.

James Quinlan Inc., bottle gas, Poughkeepsie, N. Y., has been granted charter of incorporation listing capital stock of 500 shares no par value. Directors: James Quinlan, and R. Lewis Townsend, Poughkeepsie; and Gertrude M. Maroldt, Highland, N. Y.

Gas Appliance Specialties Co. Inc., Woodside, N. J., has been granted charter of incorporation listing capital stock of \$10,000. Directors: William J. Candee, III, Floral Park, N. Y.; Richard M. Marshall, New York City; and John T. Lowry, Huntington, N. Y.



YOU'RE RIDING A WINNER!

Here's the hottest money-making tip of the year: TEMCO!

Look at the field: Last year, thanks to its increasing availability, gas became the nation's No. 1 fuel for home heating.

Look at the track: Industry sources predict 10 million new gas customers in the next 10 years... a 15% increase for LP gas in '57... gas appliance sales of 300 million units by 1974.

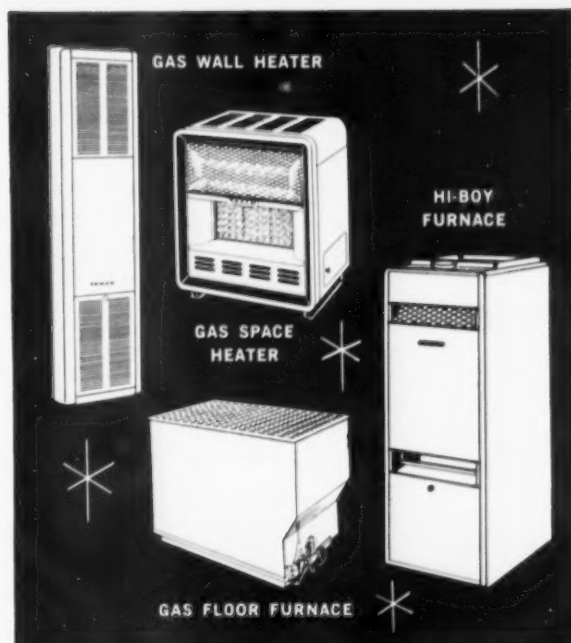
Look at TEMCO: Pacing the field in this giant sweepstakes with one sales increase after another.

Get your money on TEMCO in 1957. It's your best bet for putting real horsepower in your sales and profits on gas heating equipment... Room Heaters, Floor Furnaces, Wall Heaters, and Warm-Air Furnaces with combination Air Conditioning.

TEMCO, inc.

NASHVILLE 9, TENNESSEE

*Gas Heating
Specialists
for the Nation*



TEMCO, Inc., Dept. C-127
Nashville 9, Tenn.

Please send me full information on the TEMCO line of gas heating appliances.

Name

Firm Name

Address

City Zone State

right from the start

New D-1615 *sel-pac*

AUTOMATIC REGULATOR

the choice of thousands

- 300,000 BTU (120 CFH)
with cylinder pressures of 10 lbs. p.s.i.
- INDICATING GAUGE for
direct or remote installation
- P O L or Inverted Flare Inlet Connections
- SENSITIVE CONTROL OF PRESSURE
- LISTED BY UNDERWRITERS'
LABORATORIES

Here you have it, all in one package — an automatic throw-over regulator with indicating gauge combined in one unit for either direct or remote installation. Red flag appears when regulator automatically begins to draw from reserve cylinder.

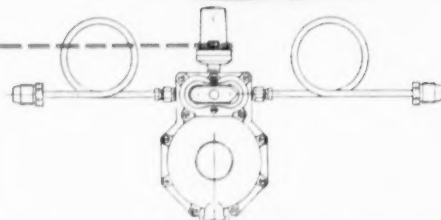
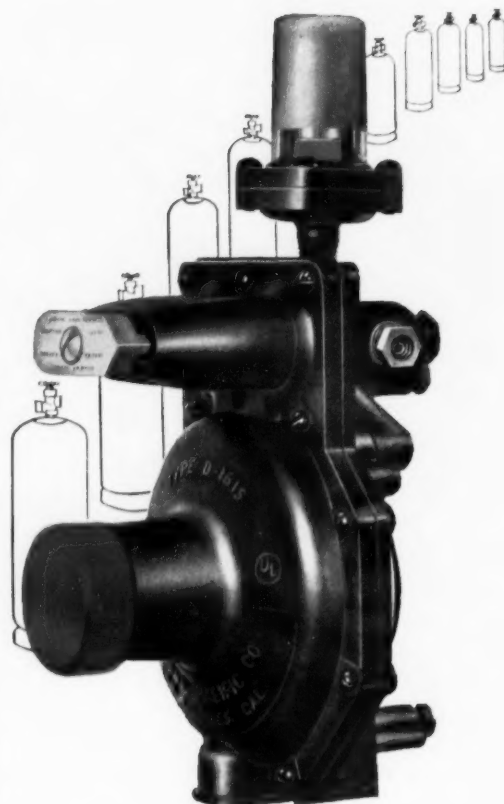
The Sel-Pac D-1615, a high output regulator, will handle all the gas that can be vaporized from 6 cylinders on each side at 0 degrees. An extra large diaphragm is used on the second stage to assure sensitive control. Foolproof and weatherproof, this simple and rugged unit may be inspected and cleaned in minutes. Downward slope of gas passageways prevents moisture traps and reduces freeze-ups. Body and cover castings of aluminum painted black aid heat transfer.



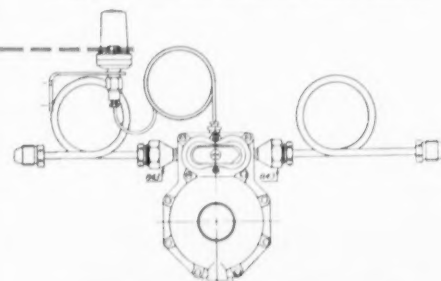
Modernize your operations. Reduce your number of out-of-gas calls with this Sel-Pac Automatic Regulator — beautiful to see, simple in construction, dependable in performance.

EASY TO SERVICE

Remove two small plugs for easy access to high pressure seats. Inspection and cleaning done quickly and easily.



Automatic Regulator Assembly. Direct Gauge. P O L or Inverted Flare Inlets.



Automatic Regulator Assembly. Remote Gauge. P O L or Inverted Flare Inlets.

**SELWYN-PACIFIC
COMPANY**

340 WEST AVENUE 26,
LOS ANGELES 31, CALIFORNIA



(Advertisement)

AUTOMATIC REGULATORS



**INCREASE
PROFITS,
DEFEAT
ELECTRICITY**

by **GEORGE R. POSTLEWAIT**
President
SELWYN-PACIFIC COMPANY

Automatic regulator assemblies primarily used in bottle installations, automatically switch over from an empty cylinder of gas to the full or reserve cylinder without interruption in gas service. Some other advantages:

1. Eliminates inconvenience of walking outside to close off the empty cylinder; open the full cylinder; retrace steps and re-light pilot.
2. Eliminates food losses and inconveniences which may occur from unexpected gas cut-off; spoiled dinner, cake or food in the oven.
3. The automatic regulator destroys the propaganda used by electrical appliance salesmen to the effect that every time a cylinder of gas is emptied, "Mrs. Bottle Gas User" will be greatly inconvenienced.
4. Since two stage regulation is employed in an automatic unit, it gives a much more uniform pressure year in and year out than with the single stage system. The customer enjoys better regulator and equipment efficiency and the gas company receives fewer service calls.
5. Here's a real matter of dollars and cents. Suppose a customer is billed by the number of cubic feet of gas that passed through a meter. With the two stage regulation provided by the automatic, the regulator can be adjusted for the 11" water column pressure and will remain constant throughout the year. In the ordinary single stage system, the pressure can climb to 14" or 15" water column pressure during the summer. The meter will measure the same number of cubic feet at the high pressure as it would at 11." Since there are a larger number of BTU's in a cubic foot of gas at 14" pressure than at 11" pressure, Mr. Gas Supplier is, therefore, paying out of his pocket for these extra BTU's, which he is giving away. Such a condition multiplied by hundreds of customers over a year's time can be responsible for a sizeable percentage of "unaccountable fuel losses."

These are but a few of the reasons why Sel-Pac automatic regulators are gaining enormous popularity. Unfortunately, some gas companies still operate on the assumption that they cannot afford automatic regulators when actually, if they were to analyze their losses, the true answer would be that they cannot afford to be without new modern automatic regulators.

SELWYN-PACIFIC COMPANY

340 West Avenue 26
Los Angeles 31, California

BPN

the trade

New district sales manager for Rego division is W. L. Farmer

New district sales manager of the Rego division of the Bastian-Blessing Co., Chicago, is W. L. Farmer, Indianapolis.

Mr. Farmer will represent the company in Ohio and Kentucky, most of Indiana and West Virginia, southern Illinois, central Tennessee, western Pennsylvania and Detroit, Mich.

He was formerly connected with A. O. Smith, Servel and Bryant equipment, becoming national sales manager of the water heater division of the last named.



W. L. Farmer
Bastian-Blessing



J. A. Robertshaw
Robertshaw

J. A. Robertshaw is elected vice president of Robertshaw

John A. Robertshaw Jr. has been elected a vice president of Robertshaw-Fulton Controls Co.

Mr. Robertshaw, a grandson of one of the founders, has been associated with Robertshaw since his school days, working in plant and office jobs during off hours and vacation.

He has been in charge of foreign operations since 1952, and was made an assistant vice president in 1954.

Hirschhoff is advertising mgr. for United Petroleum Gas

Edwin C. Hirschhoff has joined United Petroleum Gas Co., Minneapolis, as advertising manager for the firm's wholesale, retail and manufacturing divisions.

Mr. Hirschhoff was advertising manager of D. W. Onan & Sons for

**HOT WATER HEATERS
STONE LINED**

Write for the most complete water heater catalog ever published—The Hotstream Heater Co.—Dept. H—2363 E. 69th St.—Cleveland 4, Ohio

11 years, and in 1954 organized his own firm, Hirschhoff Advertising & Publicity. He has held other posts in the field of advertising, industrial editing and publicity.

American-Standard promotes Campbell to training head

Warren Campbell has been appointed training supervisor of the American-Standard air conditioning division heating and air conditioning school.

Mr. Campbell, who came with the air conditioning division in July

1954 as Eastern Central district cooling sales engineer, has served as assistant training supervisor since March 1956. In his new position he succeeds Robert Wilson whose appointment as product manager for the division was recently announced.

Mr. Campbell will conduct the activities of the air conditioning division's full-time training school which offers courses for distributor and dealer personnel in all phases of winter, summer and year-round air conditioning.

The appointment of Gerhardt D.

Bruggemann Jr., as manager of the Milwaukee sales office has also been announced by D. J. Quinn, vice president, sales, plumbing and heating division.

Mr. Bruggemann succeeds Frederick R. Dannies, who will continue to work through the Milwaukee office on special assignment. He joined the plumbing and heating division in 1951 as a salesman in the New York sales office. He went to Cincinnati a year later and remained there until his present appointment.



C. W. Paine
Anchor



Warren Campbell
American-Standard

Paine is comptroller for Anchor Petroleum Co.

Clarence W. Paine has been appointed as comptroller for Anchor Petroleum Co., Tulsa, it is announced by W. A. Baden, Anchor president.

Mr. Paine, member of the American Institute of Accountants and the National Association of Cost Accountants, was formerly employed by Keer-McGee Oil Industries as internal auditor and then supervisor of production and general accounting.

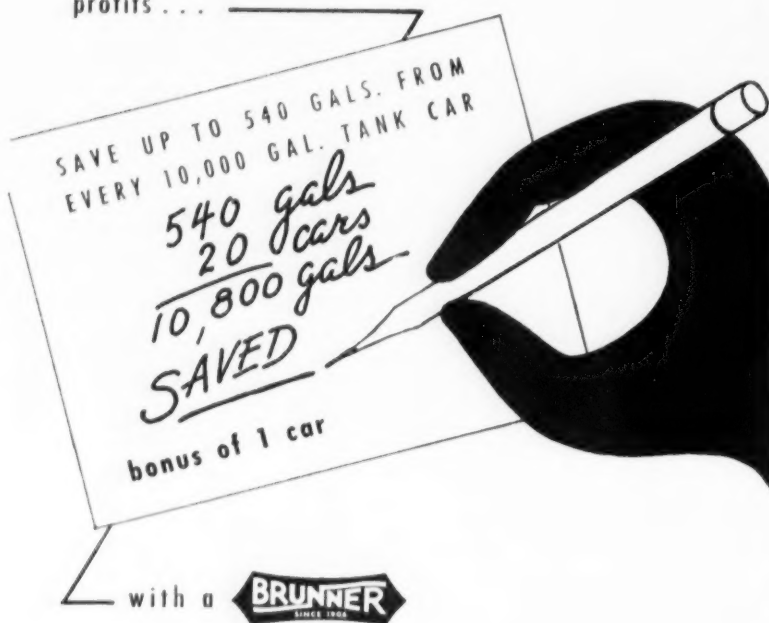
For the past year he has been chief accountant with Kirkpatrick Oil Co.

Bacon is head of Weatherhead's Latin American operations

The appointment of Carl H. Bacon as manager of Latin American operations is announced by Charles P. Kelsey, export manager of the Weatherhead Co., Cleveland, Ohio. He will coordinate all sales and service activities in Latin America, headquartering in the company's export division in Cleveland.

Mr. Bacon, a veteran of 17 years' service with Weatherhead, is intimately familiar with the Weatherhead line through practical experience in manufacturing, development, management and engineering departments within the company. His previous assignment for Weatherhead was field

Simple arithmetic
proves you can
increase your LPG
profits . . .



LP GAS TRANSFER UNIT



BRUNNER LPG UNITS
are available in 5, 7½ and 10 H.P. models . . . easy to install and service.

BRUNNER MANUFACTURING COMPANY, UTICA, N. Y.

The Brunner Co., Gainesville, Ga.

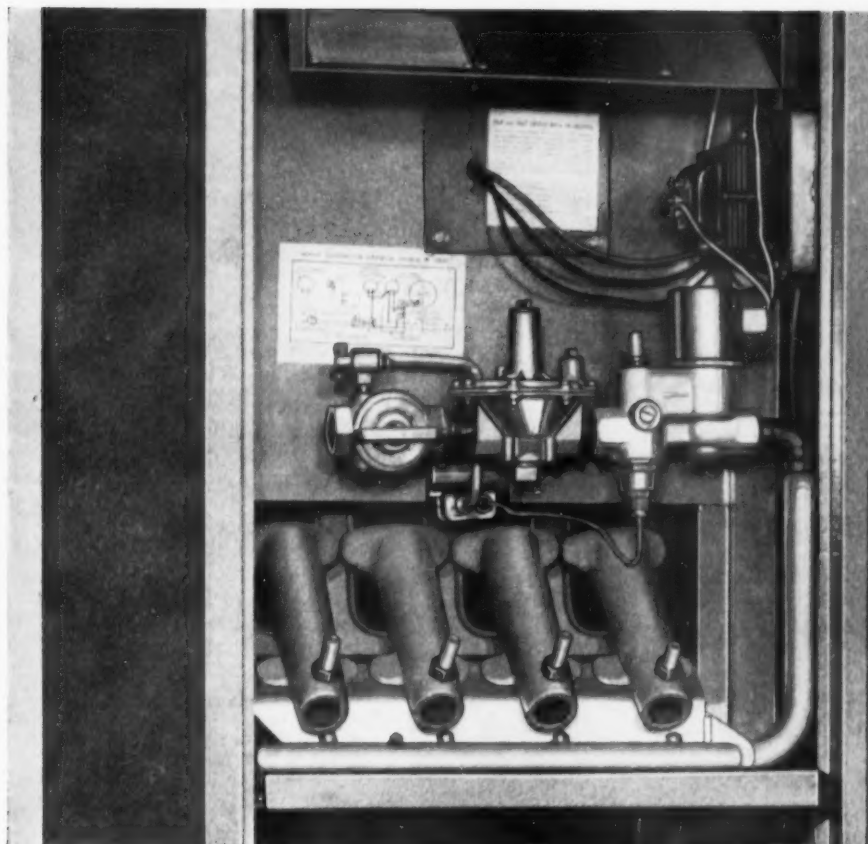
In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ontario

No liquid pump can give you such savings! The Brunner LPG Unit not only transfers all liquid to your storage tank — but also removes and liquefies the gas vapors from the tank car. It pays for itself in a short time.

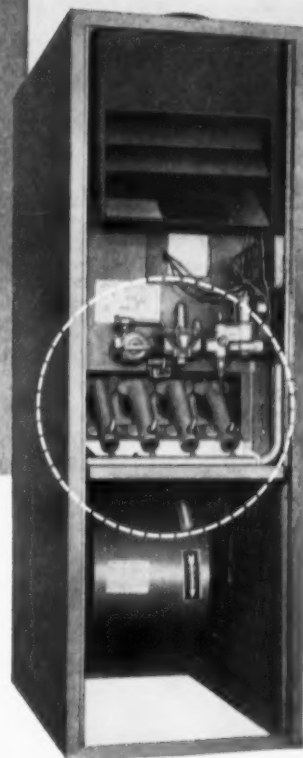
WRITE FOR FREE BOOKLET

Shows how to set up an efficient storage transfer system . . . tells all about safety and long-life features of Brunner LPG Units.





This photograph of the completely assembled Empire Central Heating Up-Flow unit illustrates the big sales feature that means more profit for you.



Keep 10% to 20% more profit
when you sell and install
EMPIRE CENTRAL HEATING

It's not how much you make, it's how much you *keep*, that determines whether or not a line is profitable.

Empire dealers keep 10% to 20% more profit because Empire Central Heating units are 100% wired and assembled at the factory. Each unit is thoroughly tested and inspected to assure perfect operation. Draft diverters are built in, and knock-outs are provided for cold air returns. This means that installation is faster and easier, and installation costs are 10% to 15% *less*.

Service calls are practically eliminated, and service costs are 75% less. Selling is easier, too.

Empire dealers can rely on Empire's reputation for quality products at competitive prices. The Empire line is complete to satisfy all requirements.

See your Empire sales representative and find out how you can make a good profit, and *keep* it. Find out, too, how the Empire C. P. Plan can mean more profit for you!

Empire
STOVE COMPANY
Belleville • Illinois



COUNTER FLOW FURNACES



engineer for LPG and anhydrous ammonia equipment sales in the United States and Mexico.

The Weatherhead line of L. P. gas cylinders and control equipment is presently distributed in Latin America by distributors.

Weatherhead appoints Robinson district sales manager

The appointment of John Garth Robinson as district sales manager for the states of Texas, Oklahoma, Louisiana and New Mexico is announced by J. H. Williams, sales

manager, The Weatherhead L. P. gas equipment and anhydrous ammonia division.

Mr. Robinson will serve the needs of dealers and tank fabricators in the four state area with the complete line of Weatherhead cylinders and utilization equipment.

In his former sales capacities he was associated with the Hickok Manufacturing Co., Rochester, N. Y., and with the American Tank Co., Dallas, Texas.

Mr. Robinson makes his headquarters at 4331 Middleton Rd., Dallas, Texas.



J. G. Robinson
Weatherhead



C. H. Bacon
Weatherhead

Rockwell promotes Parker to Atlanta district manager

Herbert Parker, sales engineer in the Atlanta, Ga., district office of Rockwell Manufacturing Co.'s meter and valve division since June 1950, has been promoted to Atlanta district manager, J. H. Walters, southern regional manager, has announced.

A native of Houston, Mr. Parker joined Rockwell in January 1937, in the Houston district office. He became a sales engineer in the Houston area in 1940 and later served as a sales engineer attached to the Tulsa district office.



K. V. Doughty
Tuloma Gas



Herbert Parker
Rockwell

Doughty elected to Tuloma's board of directors

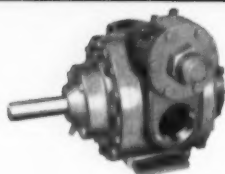
K. V. Doughty, manager of supply for Tuloma Gas Products Co., has been elected to the company's board of directors. The announcement is made by R. A. Carter, president of this nationwide marketer of liquefied petroleum gas products.

Mr. Doughty has been with Tuloma since the company's formation in June, 1954. He came from Pan American Petroleum Corp., then called Stanolind Oil & Gas Co., where he was employed as a sales engineer in Stanolind's L. P. gas sales section. He was named manager of supply when he joined Tuloma.

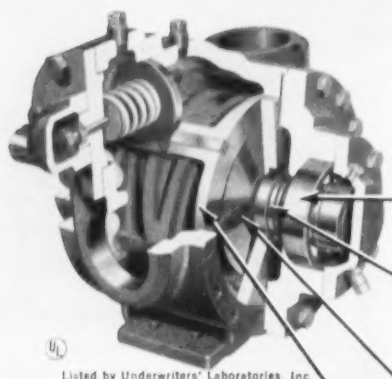
Other Tuloma board members are: R. A. Carter, president; H. R. Thomas, vice president and general manager; and W. R. Thorne, manager of sales.

BLACKMER

liquefied gas pumps



for OUTSTANDING SERVICE in handling BUTANE, PROPANE, AMMONIA and SIMILAR LIQUEFIED GASES



Listed by Underwriters' Laboratories, Inc.

OUTSTANDING DESIGN FEATURES

These features account for long life in service and low maintenance costs experienced by users of Blackmer Liquefied Gas Pumps:

HEAVY DUTY ANTI-FRICTION BEARINGS located on both sides of the rotor and completely isolated from the pumpage.

CARTRIDGE-TYPE MECHANICAL SEALS on both sides of the rotor to control shaft leakage and protect bearings from the pumpage.

SLIDING VANES, which are "self-adjusting for wear," maintain high volumetric efficiency over unusually long periods of service.

CYLINDER LINERS which can be replaced after severe service to restore pump efficiency.

Each pump is tested before shipment to 1250 lbs. hydrostatic and 300 lbs. gas pressure.

PERFORMANCE PROVEN

Blackmer Pumps have earned broad customer preference through their excellent performance with records of handling millions of gallons of liquefied gases at amazingly low operating and maintenance costs.



"liquid materials handling"® equipment

BLACKMER

INDUSTRIAL, HAND AND TRUCK PUMPS, STRAINERS, PRESSURE CONTROL VALVES
BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICHIGAN

DIVISION SALES OFFICES
NEW YORK • ATLANTA • CHICAGO • GRAND RAPIDS • DALLAS • WASHINGTON • SAN FRANCISCO
See Yellow pages for your local sales representative

Put your money on the favorite!



Philgas *

**is America's
favorite LP-Gas!**

It's easier to sell Philgas, most advertised brand of LP-Gas in America! Consumers like this high quality product . . . for its extra cleanliness and because of its high heat content, too.

You'll like to do business with Phillips! Full scale production, ample storage facilities, fleets of tank cars and trucks assure prompt, dependable deliveries . . . even in times of peak demand. Phillips contract customers call on our staff of specialists for assistance with their individual LP-Gas problems . . . for advice on economical, efficient plant operation . . . for up-to-date information about new, improved equipment and economical distribution practices.

Write for full information. Find out how Philgas can make more money for you!



Philgas is the Phillips Petroleum Company trademark for its high quality LP-Gas or bottled gas (propane, butane).

PHILLIPS PETROLEUM COMPANY

SALES DEPARTMENT, Bartlesville, Oklahoma

Offices in:

AMARILLO, TEX.—First Nat'l Bank Bldg.
ATLANTA, GA.—1428 West Peachtree Street
CHICAGO, ILL.—7 South Dearborn St.
DENVER, COLO.—1375 Kearney Ave.
DES MOINES, IOWA—6th Floor, Hubbell Bldg.

HOUSTON, TEX.—1020 E. Holcombe Blvd.
INDIANAPOLIS, IND.—1112 N. Pennsylvania St.
KANSAS CITY, MO.—500 West 39th St.
MINNEAPOLIS, MINN.—212 Sixth St. South
NEW YORK, N. Y.—80 Broadway
OMAHA, NEB.—6th Floor, WOW Building

RALEIGH, N. C.—804 St. Mary's St.
SALT LAKE CITY, UTAH—68 South Main
ST. LOUIS, MO.—4251 Lindell Blvd.
TAMPA, FLA.—3737 Neptune St.
TULSA, OKLA.—1708 Ullico Square
WICHITA, KAN.—501 KFH Building

Institute of Heating & Air Conditioning appoints Hoyt

William L. Hoyt, Jr., Pasadena, Calif., vice president of the Cornith Co., has been named chairman of the speakers and standards committees of the Institute of Heating & Air Conditioning Industries of Southern California. The appointment was made by Robert N. Hall, president, Long Beach, Calif.

Mr. Hoyt will direct an extensive speakers program to inform the public of relation of heating and air conditioning standards to

public health and comfort as a part of a public relations plan which also includes direct consumer advertising in leading southern California newspapers.

Nordine named to regional sales post by Williams

The appointment of Larry Nordine as western regional sales manager for the Williams division of Eureka Williams Corp. has been announced by J. M. Gleason, Williams sales manager.

Mr. Nordine will supervise sales of the company's heating and cool-

ing products in the Middle and Far West. He will make his headquarters at the Williams plant in Bloomington, Ill.

Mr. Nordine had been general sales manager for W. G. Best Homes Inc. Earlier he was sales manager for the Youngstown division of Sampson Co., wholesale distributors in Chicago.



R. H. Dieckelman
Cylinder division



Edward Elliott
LPG division



R. A. Hirst
Tanks, containers



T. V. Montgomery
Industrial products

Pressed Steel promotes four to expanded sales department

The creation of four product divisions in the sales department of Pressed Steel Tank Co. of Milwaukee, is announced by N. A. Evans, vice president in charge of sales for the company.

Edward Elliott, Jr., is manager of the L. P. gas division; R. H. Dieckelman, manager of the high pressure cylinder division; T. V. Montgomery, manager of the industrial products division; and R. A. Hirst, manager, tank and container division.

Together, these four men have a combined total of 70 years' service with Pressed Steel.

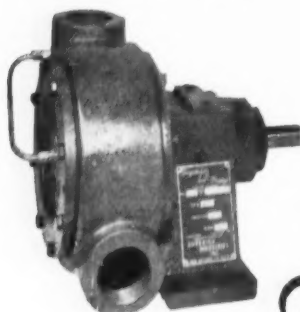
Worthen is market development manager for General Electric

Kent J. Worthen has been appointed market development manager for the General Electric Communication products department and will coordinate the company's activities in the sale of two-way radio to new user markets. He was formerly district sales manager for General Electric mobile com-

HIGH VOLUME

against differential pressures

UP TO
300 P.S.I.



NEW MODEL TC

Warmer weather is ahead, and you will have to work against higher differential pressures. Plan NOW to equip each of your trucks with a "Superior" LPG Precision Rotary Pump. This specially-designed pump is capable of high volume at low pump and engine speeds, against differential pressures up to 300 P.S.I. —provided suction conditions are adequate and the pump is properly installed. Saves time, labor, money. Enables you to fill tanks and cylinders faster, more economically, and serve more customers with less equipment.

Superior
L P G
PRECISION ROTARY PUMP

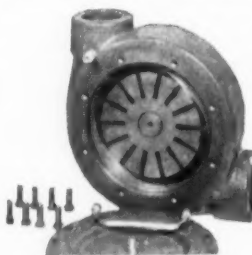
This compact, light-weight pump has a two-lobed cam, with double pumping cycle for each revolution. Within the rotor are 14 hydrostatically-balanced, pressure-activated vanes that provide positive pumping action. The vanes are self-adjusting and self-lubricating. No metal-to-metal contact; and no wear, except on the vanes which can be replaced easily, in a few minutes, without removing the pump from its truck or mounting . . . Easy to install. The base fits the average truck mounting without need for piping change . . . Available in 75 and 110 G.P.M. sizes. Write for descriptive folder and name of nearest distributor.

SUPERIOR INDUSTRIES, INC.

1007 National Bank of Commerce Bldg.
NEW ORLEANS 12, LA.

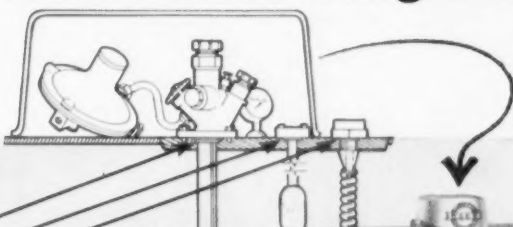
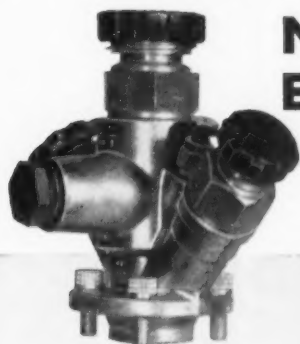
- SAVES TIME
- SAVES LABOR
- SAVES MONEY

INQUIRIES INVITED
FROM DISTRIBUTORS



PERFECTION'S

New Flanged MULTIVALVE* With Exclusive Float Ring Seal** ...



Permits Up To 52% Faster Filling!

The new streamlined MULTIVALVE used on BS&B PERFECTION® Propane Systems has approximately 52% faster filling capacity than previous valve designs, and is a great time-saver on tank-wagon deliveries.

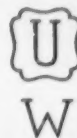
Flanged for easy servicing and fitted with the *exclusive* BS&B Float Ring Seal for "bottle tight" safety under all conditions, this MULTIVALVE includes double check filler valve, vapor return valve, POL service valve, percent outage gauge and extra liquid outage connection.

Other outstanding features of the BS&B PERFECTION® Propane System are the one-piece weatherproof dome... the recessed internal relief valve for maximum safety... the heavy lifting lugs placed far out on the heads of the tank for better balance and the ease of handling... and the sturdy one-piece steel channel wrap around legs.

Why not standardize this year on the one propane system that has *everything* you and your customers want and need - BS&B PERFECTION®... with the Golden Dome!

*MULTIVALVE is a registered trade name of the Bastian-Blessing Company.

**Patented



BLACK, SIVALLS & BRYSON, INC.

Propane Equipment Division, Dept. 6-AB 4
7500 East 12th Street Kansas City 26, Missouri

munications equipment at Los Angeles.

Mr. Worthen's appointment is announced by James D. Helm, national sales manager for the mobile communications department.

Mr. Worthen will be located at the products department headquarters in Syracuse, N. Y.

Ward and Cox are new sales representatives for Janitrol

The appointment of Thomas J. Ward as sales representative for the Janitrol heating and air condi-

tioning division of Surface Combustion Corp., has been announced by H. C. Gulney, sales manager. Mr. Ward will represent the Janitrol line of residential, commercial, and industrial heating and air conditioning equipment in the central Ohio area.

Also announced is the appointment of Edward A. L. Cox, as sales representative in New Mexico, Arizona, and the El Paso trading area. His office will be located at 831 Argentina St., El Paso, according to C. C. Owen, western sales manager.

General Controls appoints Beard to engineering division

The recent appointment of Chester S. Beard to head the control valves and actuators engineering division of General Controls Co. gives that company the services of one with wide experience in instrumentation and controls engineering, according to William S. Ray, president of the firm.

Mr. Beard will be located at the company's western research and development center, Glendale, Calif. He returns to the West Coast after six and a half years Eastern service with Foster Engineering Co. as research and development engineer and with Ebasco Services in New York as instrument consultant.



C. S. Beard
General Controls



Harry Welch
Controls Co.

Controls Co. names Welch advertising manager

Harry Welch has been appointed to advertising manager for the Controls Co. of America, it is announced by Louis Putze, president of the corporation.

Mr. Welch, who has been advertising manager of the A-P Controls division for the past five years, will coordinate the advertising for the following products sales divisions and subsidiaries: Soreng Products, Schiller Park, Ill.; A-P Controls, and Milwaukee Valve Co., Milwaukee. He will also handle general corporate and international division advertising.

Ricca joins Du Mont as manager of mobile radio dept.

Joseph A. Ricca, formerly operations manager of the precision components division of the Norden-Ketay Corp., has joined Allen B. Du Mont Laboratories Inc., as manager of the mobile radio communications department. The announcement is made by Fred M. Link, the department's director of operations.

In his new post, Mr. Ricca will be in charge of overall administra-



deliver
EXTRA
value
to
EXTRA
customers
with
RANSOME
LEAD MELTING
FURNACES!

RANSOME Furnaces are ruggedly constructed to withstand rough, tough use...in the shop, or out in the field! They're engineered to provide the utmost efficiency...producing an *intensely* hot flame against the bottom center of the pot.

Stock and sell RANSOME Furnaces...They're ideal not only for melting Lead and Babbitt, but also for heating Glue, Paraffine, Sewer Compound, Tar, Wax...and for many other jobs. You can **BUILD** customer satisfaction...while you **BUILD** your LP-Gas **LOAD**.

WRITE TODAY for catalog and latest price lists.

RANSOME COMPANY

Liquefied Petroleum Gas Division

ROOM A-4 • 4030 HOLLIS STREET • EMERYVILLE, CALIFORNIA

Makers of
Torches, Burners,
Furnaces for LP-Gas,
Since 1932

57

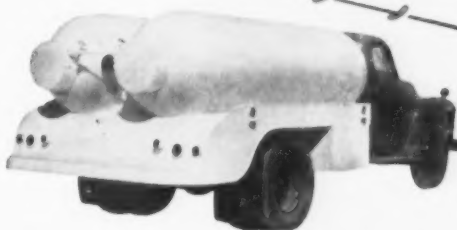
Ransome

RED BRUMIT SAYS

Let's be Basic...



It takes all three of these to produce *any* kind of product... BUT the quality of the product depends on the degree of quality of each of the three ingredients. The best **MATERIAL**, which we use, of course, is available to all who would pay its price. **MANPOWER** is also available to all. Yet our manpower is trained for our specific problems... schooled to the point of real craftsmanship. **KNOW-HOW**, real know-how, cannot be bought. It is acquired mostly through years of experience. The know-how at Dal-Worth is backed by 32 years' successful experience.



There is the same advanced styling and engineering for service and economy in all our propane-butane and anhydrous ammonia tanks, such as this 1200 - 2000-gallon delivery unit with equipment installed to meet any state's specifications, or the...

You can bring **ALL** your tank needs to Dal-Worth in complete confidence knowing that they will receive the best in each of these basic ingredients. **QUALITY MATERIALS... REAL CRAFTSMANSHIP... and KNOW-HOW BACKED BY YEARS OF EXPERIENCE.**

DAL-WORTH
TANK COMPANY

W. G. (RED) BRUMIT, OWNER



A KNOW-HOW BACKED BY 32 YEARS OF EXPERIENCE

BOX 818

GRAND PRAIRIE, TEXAS



Space-Mizer LP Gas Dispenser; 1000, 2000 or 3000 WG capacity; completely self-contained with choice of equipment and colors. This is the ideal unit for service stations, fleet operators and LP gas dealers.

tion, planning and coordination of the manufacture and sale of mobile radio communications systems and associated equipment.

Berno promoted to treasurer of Tappan Stove Co.

Paul I. Berno, merchandising director of the Tappan Stove Co., has been appointed treasurer of the company, according to Alan P. Tappan, president. He replaces A. C. Rhoads, vice president and treasurer who has retired.

Mr. Berno was development manager for Tappan in 1946 and became director of merchandising

two years later. Prior to the war he was a sales correspondent, territory sales manager and assistant sales manager. He joined Tappan in 1929.

Mr. Rhoads, a veteran of 40-year's service with the range manufacturing concern, retired effective February 1. He will continue as a member of the board of directors and act in an advisory capacity.

In other executive changes Charles C. Wilson, district sales manager, has been named to succeed Mr. Berno as merchandising director and Robert G. Appleby will assume the duties of the

newly-created position of assistant treasurer.

Arthur M. Probst, territory manager for the Pittsburgh area, takes over the north central sales division formerly supervised by Mr. Wilson. Mr. Probst will supervise 11 salesmen in a seven-state area.

Joseph S. Prewitt replaces Mr. Probst in the Pittsburgh territory, while Bruce A. Ritzenthaler has been named to take over as territory manager for Mr. Prewitt's territory in Ohio.

American Meter names two new sales representatives

Eugene D. Rouse and Jack S. Coldren have been named sales representatives for the Garland, Texas, and Fullerton, Calif., sales districts of American Meter Co., after completing a six month company training school in Erie, Pa., according to C. Benson Dushane, vice president.

Mr. Rouse was formerly associated with the Federal Bureau of Investigation and Boeing Airplane Co.

Prior to joining American Meter, Mr. Coldren was associated with Burlington Mills Co., Los Angeles.

Payne Co. promotes Hoffman to assistant sales manager

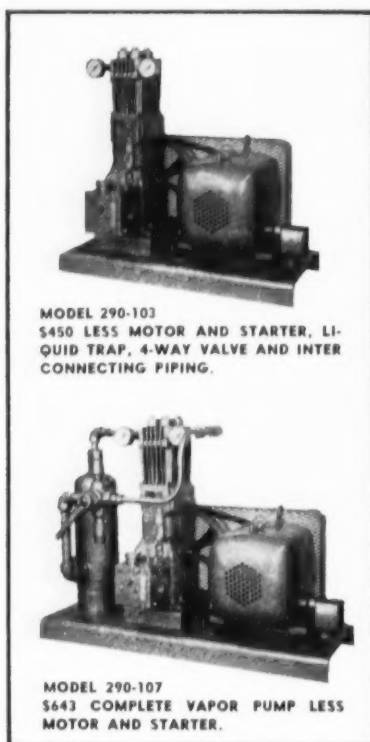
The Payne Co. recently announced the promotion of John A. Hoffman to the position of assistant to the general sales manager.

Mr. Hoffman began his career with Payne in 1952, and his new duties will include supervision and responsibility for the sales order and customer relations department.

We hear a great deal about the pursuit of happiness. This is the weirdest myth that has survived in an age of facts and science. It cannot be caught by pursuing, nor found by seeking, nor given by one to another. Happiness **MUST BE EARNED**. It is a reward that comes only to those who can forget their own yearning for happiness in their efforts to bring comfort, peace of mind and pleasure to others.

After what we have been through in recent years it seems hard to imagine that this country was founded by people who wanted to avoid taxes.

It is better to give than to lend, and it costs about the same.



MODEL 290-103
\$450 LESS MOTOR AND STARTER, LIQUID TRAP, 4-WAY VALVE AND INTERCONNECTING PIPING.

MODEL 290-107
\$643 COMPLETE VAPOR PUMP LESS MOTOR AND STARTER.

Said an Engineer to us the other day—

"I CAN'T SEE HOW ANY LP GAS DEALER COULD BUY ANY COMPRESSOR EXCEPT A CORKEN!"

That is all right with us, but of course we know why they buy other compressors — they don't know all about the Corken and the many ways in which it is different to the advantage of the gas dealer.

The Corken Vapor Pump is not an ice machine—it was designed with only the LP Gas dealer bulk plant and personnel problems in mind. Yes it even compensates in many ways for untrained plant operators. It is the only bulk plant compressor in the world which does not pump crankcase oil along with the vapor being pumped. It is the only LP Gas vapor pump which automatically proportions *one* drop of oil every 150 RPM to the compression chamber. It is the only vapor pump supplied with an inlet trap which contains a double float operated valve which keeps liquid out of the compressor. But it is available without the trap if you think there will be no liquid in your plant system.

The Corken Vapor Pump of 3 HP, 5 HP or 7½ HP will do all the pumping any compressor will do of the same horsepower on exactly the same piping system! And item for item, feature for feature—a Corken costs less than any other compressor you can buy!

CORKEN'S	OKLAHOMA CITY	SAN JOSE, CALIFORNIA
	1301 East Reno	1458 Richards
	PLAINFIELD, NEW JERSEY	
		935 Madison Ave.

PREST-O-LITE Trade-Mark CYLINDERS



Finish Line

To ward off the effects of corrosion, even the best steel requires protection from rough handling, atmospheric impurities, and the weather. This is especially true of LP-Gas Cylinders for home installations.

Each PREST-O-LITE cylinder is first shot-blasted to remove scale and dirt. Then a zinc chromate undercoat is applied to inhibit rust and act as a bonding agent. The finish coat is corrosion-resistant metallic aluminum enamel. All paint is applied by electrostatic deposit, to assure even and complete coverage over the entire surface. While primer and finish coats are being applied, an asphalt-base, anti-rust coating is simultaneously sprayed on the bottom and inside the footing of the cylinder. The finish is thoroughly dried—from the inside out—by passing the rotating cylinder between banks of infra-red elements, as shown in the photograph.

The end product is a superior cylinder, with the high corrosion resistance and attractive appearance you want. Call the LINDE office nearest you for more information, or write LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y. In Canada: Linde Air Products Company, Division of Union Carbide Canada Limited, Toronto.

The terms "Linde" and "Prest-O-Lite" are registered trade-marks of Union Carbide and Carbon Corporation.

MADE BY

Linde
Trade-Mark

PREST-O-LITE
Trade-Mark
CYLINDERS
FOR
LP-GAS



NOW 3 SIZES

OF RED SEAL LIQUID LP-GAS
METERS TO MATCH THE
GROWTH OF YOUR BUSINESS

Each a complete LP-gas metering system
... all accessories included in one
compact unit

Featuring a truly effective combination
of vapor eliminator and differential
valve which reduces load on pump
and needs no adjustment

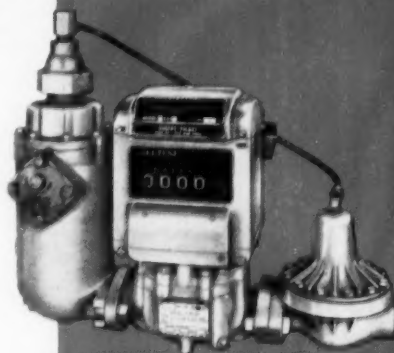
Each available with Print-O-Meter to
build customer confidence

Each based on famous Red Seal mea-
suring chamber ... only one moving
element

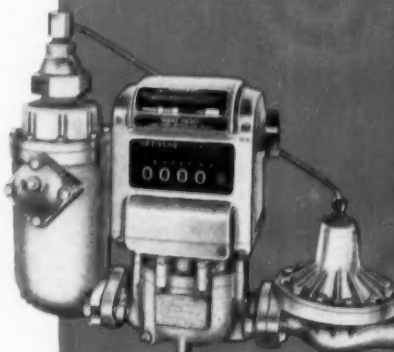
Backed by unit replacement plan and
nationwide service centers to keep
your trucks on the go



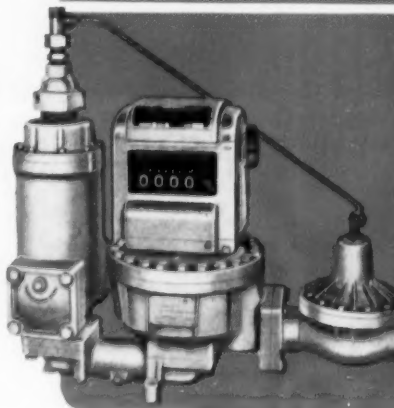
Free Bulletin 779
shows recommended closed-system
installation of LP-Gas liquid meters.
Ask for your copy today.



1 1/4"
30
GPM
FOR TANK TRUCKS



1 1/2"
60
GPM
FOR TANK TRUCKS
AND BULK PLANTS



2"
100
GPM
FOR BULK PLANTS,
TRANSPORTS,
AND HIGH RATE
TANK TRUCKS

RED SEAL

LP-GAS

LIQUID METERS



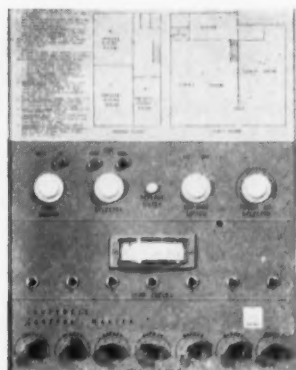
Accuracy You Can Bank On

NEPTUNE METER CO., 19 West 50th St., New York 20, N. Y. Canadian Factory: NEPTUNE METERS LTD. Toronto 14, Ont.

WHAT'S NEW

IN PRODUCTS AND TRADE LITERATURE

For further information on items reviewed in this section use the convenient post-paid Readers' Service Cards on pages 99, 100



Central control panel

A new central control panel has been developed which enables a person with no technical training in the operation of a heating-cooling-ventilating system to stop and start the comfort equipment, read the temperatures of various points in the building and make adjustments in individual rooms or zones.

The midget "supervisory" center will be custom-built by Minneapolis Honeywell Regulator Co. for establishments that have multiple temperature control areas but normally do not employ an operating engineer.

Dials, switches, and pilot lights permit the proprietor, building manager, or maintenance man to operate the equipment. Complete instructions are printed on the panel and lights signal when various pieces of equipment are in operation.

Size of the units depend on the number of control zones and other functions to be provided but will normally be built so they can be mounted between conventional wall studding.

Circle 1 on Readers' Service Card



Wide-roll pipe cutter

A new rigid tool, designed for easier, better pipe cutting with a power drive, is now available for heavy duty use following introduction of the No. 202 wide-roll cutter by the Ridge Tool Co.

Extra wide roll built into the 202 cutter features double the bearing surface on pipe. It sets and holds revolving pipe at a perfect right angle, according to the company.

Circle 2 on Readers' Service Card

Slow drying sealing compound

A thread sealing compound—Rectorseal No. 5—that dries slow and sets soft, has recently been perfected by Rectorseal division of Rector Well Equipment Co.

This sealing compound is particularly suited for assembly line connection work since it will not dry in the open can. It will not

harden with age under recommended service conditions.

Extended field tests show it is excellent for piping connections carrying propane, butane, and numerous other products.

This slow-dry—soft-set compound is now available in ¼, ½ and 1-pint brush top cans and 1-quart friction top cans. Samples are available.

Circle 3 on Readers' Service Card



Unvented wall heater

A 28 in. high unvented wall gas heater—Model SWC-250—is announced by Quaker Manufacturing Co. for use with natural, manufactured or L. P. gas.

Designed to hang on the wall, only two screws attached to a wall plate are required for installation in minutes.

Quaker's heater includes such features as the "raised port" burner, porcelain heating cham-

ber, "air flow" design and construction for greater volume of circulating air, safe, extra cool cabinet, and modern decorator styling to blend with any room decor.

The new heater is an addition to Quaker's wall gas heater line, which now is available in 28 and 48 in. high (both 25,000 Btu) unvented wall gas heaters; and 60 in. high (one 25,000 Btu and the other 40,000 Btu) vented wall gas heaters.

Circle 4 on Readers' Service Card



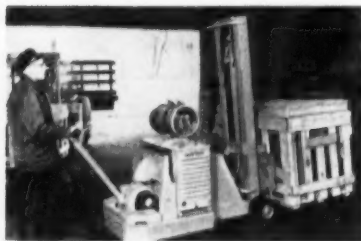
Gas brooder

The Hudson-Hart Manufacturing Co. gas brooder with modulating burner control that maintains desired temperature under the hover within one to two degrees, can now be completely assembled in six minutes flat, according to the manufacturer.

All screws, bolts and wing nuts are "pre-assembled" into the parts so that they fall into place for quick assembly.

This new brooder is available with 54-, 72-, 84-, and 96-in. rigid hovers for broods up to 1000 birds. Steel heat retainer curtains may be swung up, on the hover edges, if desired.

Circle 5 on Readers' Service Card



Hand truck power unit

A new, bantam-sized LPG-electric power unit, model W12, which is designed to fit electric powerized hand trucks, is announced by the Ready-Power Co.

The model W12 features instantly available, continuous duty electric power plus the economy, long life and low maintenance of L. P. gas operation. L. P. gas

components are listed by Underwriters' Laboratories and comply with Factory Mutual recommendations.

The unit accommodates a quickly interchangeable 20-lb fuel cylinder.

Circle 6 on Readers' Service Card

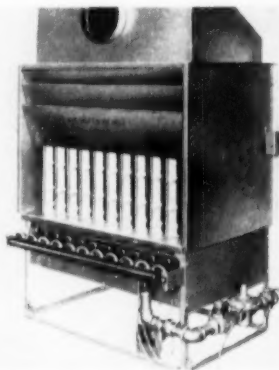


L. P. gas carburetor

A small L. P. gas carburetor designed especially for lift trucks is now made by Century Gas Equipment Co. This carburetor is smaller than the gasoline carburetor it replaces.

Available in 1/2 in., 3/4 in. and 1 in. SAE sizes, it fits into confined areas and is designed to permit changes of linkage and leverage to suit conditions of space and throttle arrangement.

Circle 7 on Readers' Service Card



Duct furnace

The Payne Co. recently announced the addition of an aluminized duct furnace to its present line of forced air, space heating and air conditioning equipment.

The new line is primarily designed for commercial and industrial applications and will be available in four basic sizes, 200,-

000, 280,000, 360,000, and 440,000 Btu inputs for natural gas, but slightly lower for L. P. gases.

The aluminized heat exchanger material is reported by an independent laboratory to have four times the corrosion resistance of mild steel, based on average penetration rates, and 33 times the corrosion resistance at the maximum penetration rate under identical test conditions.

Designed at a new low height, 51 in. plus draft diverter, compactness, and lighter weight cuts handling and installation costs, it is stated.

Circle 8 on Readers' Service Card



Liquid flowmeter

Rotron Controls Corp.'s model A3T type 20AA20E 2-in. pipe size liquid flowmeter is especially designed for bulk measurements of L. P. gas and has a capacity of 25 to 200 gpm and a working pressure of 600 psig. Registration is non-electrical and directly on a 6-digit totalizing and non-resettable mechanical counter.

The overall length is only 12 in. and weight is 7 lb.

Circle 9 on Readers' Service Card



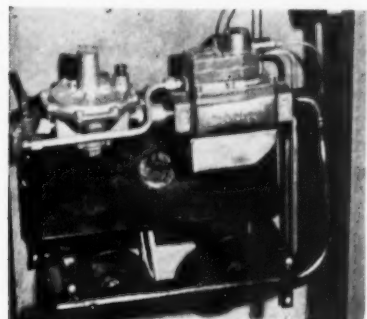
Selective signaling package

A single-unit console providing complete selective calling facilities for land-mobile 2-way radio base station installations has been announced by Motorola Inc., communications and industrial electronics division.

The console combines all tone

signaling elements, including tone generator, timer, power supply and code selector, in a single compact package. Greatly simplified with respect to installation, adjustment and operation, the console can be quickly and easily added to any existing 2-way radio system. Overall dimensions are approximately 13 x 10 x 7 in., weight is 24 lb. complete.

Circle 10 on Readers' Service Card

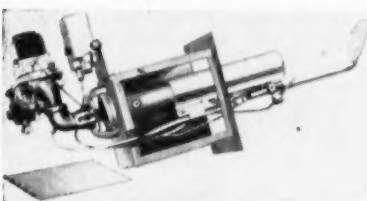


Automatic control

Development and production of a new-type automatic control for high-capacity gas home heating units is announced by Robertshaw-Fulton Controls Co.

The control, designated the HC-E, includes in one unit a positive snap-action gas valve, an automatic pilot with the 100 per cent shut-off feature, and a built-in pilot filter.

Circle 11 on Readers' Service Card



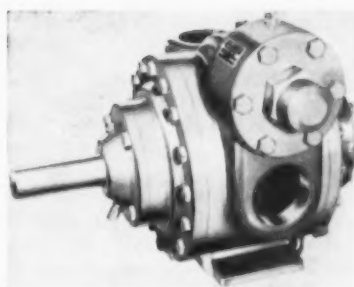
Gas inshot burner

An adjustable, universal model OR-16 gas inshot burner, AGA certified and approved, designed for simpler, easier conversion of small and medium residential gun-type oil fired boilers and furnaces to automatic gas heat is announced by the Killam Gas Burner Co.

One standard unit of 100,000 to 200,000 Btu/hr capacity fits all flat or curve faced installations with universal mounting flange.

Shipping weight 45 lb.

Circle 12 on Readers' Service Card



Liquefied gas pumps

Blackmer Pump Co. has announced the listing of its liquefied gas pumps by Underwriters' Laboratories, Inc.

The listing includes a complete line of rotary vane type pumps for tank truck, bottle filling, and bulk plant use. Applications of the line include the handling of a variety of liquefied gases, including butane, propane, ammonia and similar products.

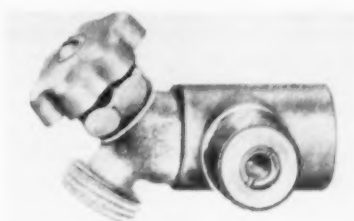
Circle 13 on Readers' Service Card

Small switch

A switch that can be installed in limited-access areas and actuated by a screwdriver is being marketed by Micro Switch, a division of Minneapolis - Honeywell Regulator Co.

The compact switch is described as especially handy for installation in out-of-the-way places, or where a switch needs to be operated only occasionally, such as when testing circuits.

Circle 14 on Readers' Service Card



Water heater flow control

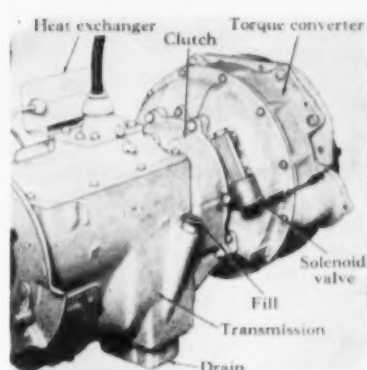
To assure improved hot water supply for the food service industry, Ruud Manufacturing Co. is now adding to standard "Sanimaster" gas water heater equipment the new flow controlling "T."

This device is said to eliminate cold water turbulence in the gas water heater tank, and makes un-

necessary a check valve in the return line.

According to Ruud, the new device should solve the problem that is created by the installation of a 180° F circulating line between the gas water heater and the dish, silver or utensil washer. A high-flow pump is generally installed to continuously circulate this high temperature water.

Circle 15 on Readers' Service Card



Truck transmission

The motor truck division of International Harvester Co. has introduced a new "select-o-matic" transmission for heavy-duty International trucks.

Select-o-matic features an electro-hydraulic clutch and high-efficiency torque converter of International design, in combination with a five-speed synchromesh transmission. It delivers advanced truck performance and fuel economy while greatly reducing driver effort through elimination of the clutch pedal, according to the company.

Circle 16 on Readers' Service Card

Liquid-gas separation device

The Selas "Liqui-Jector," a liquid-gas separation device for removal of entrained liquids and solids from air, gas and steam systems, is now available in 12 standard sizes. It has previously been furnished by Selas Corp. of America as specially designed units, custom-built.

The "Liqui-Jector" completely removes suspended liquid (water, oil, and emulsion) and solid particles from process and instrument gas supply lines.

Circle 17 on Readers' Service Card

For further information on these products use Readers' Service Cards on pages 99, 100

TRADE LITERATURE

Air conditioning data

Corrosive control and balance in year-around air conditioning systems are discussed in a new heating and air conditioning booklet prepared by the Permaglas division, A. O. Smith Corp.

The first complete report on the new Permaglas heating and air conditioning units, the booklet also includes construction feature data and gives complete specifications for all Permaglas heating and cooling products.

Circle 18 on Readers' Service Card

Combustion-testing bulletin

A bulletin is available illustrating and describing a line of gas pressure manometers, recording thermometers, carbon monoxide detectors, kits for testing gas heating equipment, CO_2 indicators, and other equipment.

It is available upon request.

Circle 19 on Readers' Service Card

Specification sheet

The Manchester Welding & Fabricating Co. has recently issued a specification sheet covering its line of burning equipment. It covers the company's 6-row "flame-all," non-selective row crop burner; the 6-row burner attachment; the liquid and vapor burners; bracket holder; the burner assembly and pilot by-pass and regulation assembly.

Prices are quoted on all items and copies may be had upon request.

Circle 20 on Readers' Service Card

Steel tube fittings catalog

The publication of a new 48-page steel tube fittings catalog is announced by the Weatherhead Co.

This catalog incorporates complete engineering data on Weatherhead 7000 Series and 8000 Series "Ermeto" hydraulic flareless tube fittings and Weatherhead "Flare-Twin" SAE 37° flare (JIC) hydraulic tube fittings. In addition to complete engineering specifications, a section is devoted to assembly instructions, materials, finishes and operating pressures.

Circle 21 on Readers' Service Card

Gas thermostat bulletin

A combination thermostat specially designed for use on gas ranges containing a section for room heating, is described in a bulletin from Robertshaw-Fulton Controls Co.

Model BJ-CR is a combination gas cock and thermostat with an automatic shut-off valve built into the body.

Bulletin RT-784 contains a detailed cut-away drawing of the control, as well as diagrams for installation.

Circle 22 on Readers' Service Card

Radio data

General Electric's communication products department has published two bulletins on 2-way radio selective-calling.

ECR-448 describes "Individual Call." ECR-439 explains "Group Call."

Circle 23 on Readers' Service Card

Sales catalog

A comprehensive catalog produced for the LPG industry is available from the Selwyn-Pacific Co. In color and fully illustrated, this catalog comprises 12 different sections. Each section has a divider which provides quick identification for easy reference to LPG equipment for storage and utilization devices, including domestic and the mobile L. P. gas installations.

Not only will the LPG dealer and tank fabricator find the new "Sel-Pac" catalog of interest product-wise, but also for its amount of technical information of practical value.

Each catalog is assigned to an individual name enabling the supplementing of it with new data, or revisions, as they are issued.

Circle 24 on Readers' Service Card

Heat control specifications

A new concept in heating—full-time heating, instead of the on-off control of thermostatic systems—is entertainingly explained in an illustrated booklet prepared by the Permaglas Division, A. O. Smith Corp.

Titled, "The Story of the World's Second Best Heating System," the four-color booklet compares modu-

lated control to heat control in the human body. The fine temperature control maintained by constant, but imperceptible, changes in the human body is matched to a fraction of a degree by the new system, called "Magic-Heat."

Circle 25 on Readers' Service Card

Heat treating bulletin

A new Surface Combustion Corp. bulletin explains the economic features of completely mechanized heat treat lines.

Twenty-four basic furnace mechanisms are shown with isometric drawings. Photos and diagrams illustrate the steps to be used in building automated lines to insure better end product quality with accuracy.

The new "bulletin SC-176" is a compressive commentary on mechanized heat treating.

Circle 26 on Readers' Service Card

Valve lubricant bulletin

A completely new 12-page version of Rockwell Manufacturing Co.'s bulletin on "Lubricants for Rockwell - Nordstrom Valves" (V-220, Rev. 1) provides more detailed lubricant selection data, including information about 80 new lubricants.

Four new lubricants not listed in previous bulletins are described in detail, including No. 555, a general-purpose lubricant for hydrocarbon liquid and gas services.

Other leading lubricants are described in more detail than in previous bulletins.

Circle 27 on Readers' Service Card

Book on manufacturing methods

LPG dealers interested in carving out a bigger piece of the industrial market will find Chilton Co.'s 561-page book especially helpful. It covers methods of manufacturing and processing in a wide variety of industries and includes latest developments and applications.

Entitled "Manufacturing Methods and Processes," the cloth-bound hard cover book was written by Arthur C. Ansley, manufacturer and engineer. It contains 788 illustrations and sells for \$12.50.

Circle 28 on Readers' Service Card

FOR MORE INFORMATION

about New Products in this issue . . .

use these time-saving

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Each New Product or Trade Literature item reviewed in this issue is numbered. To get further information about items that interest you, circle the corresponding numbers on the Readers' Service Card below; then PRINT your name, title, company and address plainly and drop the card in the mails (no postage is needed).

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April, 1957

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BUTANE-PROPANE News

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BUTANE-PROPANE NEWS

198 SOUTH ALVARADO ST.

LOS ANGELES 57, CALIF.

Now...for the 3rd Year... GEM National Advertising is Selling More LP-Gas for You

*These forward looking
Suppliers to the Gas Industry
support and pay for
this program:*

American Cast Iron Pipe Co.
American Meter Company
Bastian-Blessing Co.
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Fisher Governor Co.
E. F. Griffiths Co.
A. C. Lawrence Leather Co.
Rockwell Manufacturing Co.
M. B. Skinner Co.
Sprague Meter Co.
Superior Meter Co.
Subsidiary of Neptune Meter Co.
U. S. Pipe and Foundry Co.
Vulcan Rubber Products
Division of Reeves Brothers, Inc.
Walworth Co.

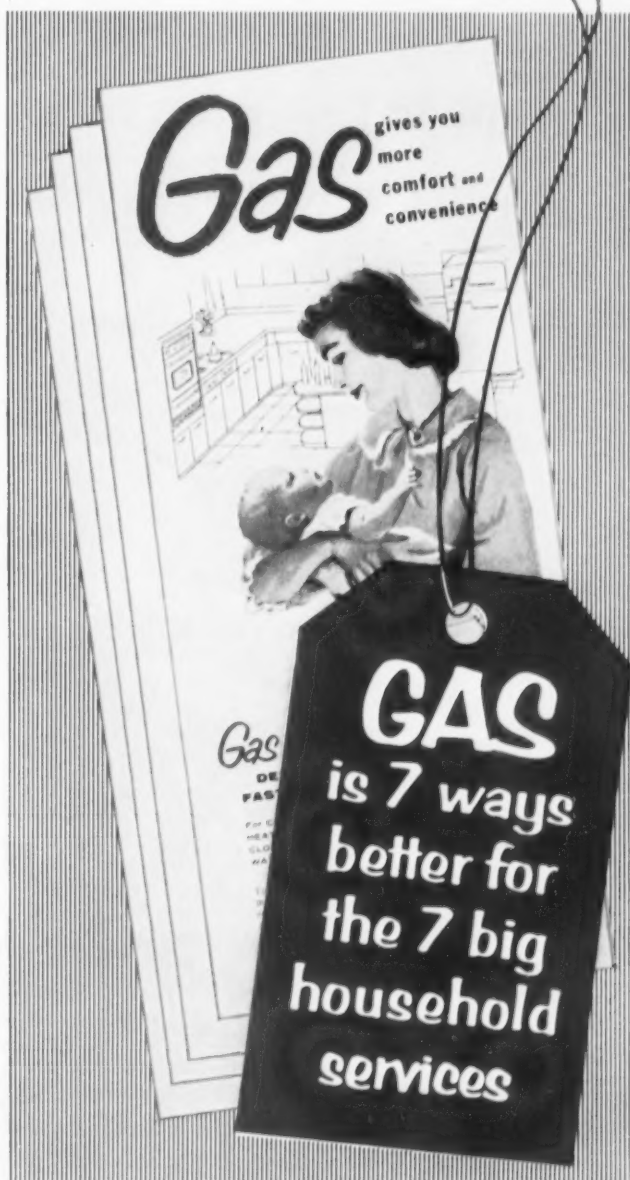
Now in its third year, the Gas Equipment Manufacturers National Advertising Program is helping sell more LP-Gas, LP-Gas appliances and LP-Gas equipment for every dealer and manufacturer.

All Suppliers to the LP-Gas Industry are invited to join this business building and sales insurance program.

Hundreds of LP-Gas dealers are profiting by using reprints of these colorful advertisements as dealer mailings, newspaper ad mats, GEM displays, and GEM price tags.

*As the Gas Industry Goes, So
Will Go the Business of Every
Supplier to the Gas Industry.*

For information on how you can participate and profit, write to: Gas Equipment Manufacturers Committee, c/o Gas Appliance Manufacturers Association, 60 East 42nd St., New York 17, N. Y.



CALENDAR

Coming events in the Industry

1957

March 28-29—Northwest District LPGA Convention—Hotel Vancouver, Vancouver, B. C.

March 28-29—Oklahoma Utilities Association Annual Convention—Tulsa, Okla.

March 31-April 2—Ohio LPGA Convention and Trade Show—Deshler-Hilton Hotel, Columbus.

April 3-5—Eastern Canadian District Convention and Service School—Mount Royal Hotel, Montreal

April 4-6—Western Liquid Gas Association Convention and Trade Show—Hotel Statler, Los Angeles.

April 8-10—GAMA Annual Meeting—The Greenbrier, White Sulphur Springs, W. Va.

April 8-10—Fourth Annual Servicemen's Conference, co-sponsored by the Missouri LPGA and the Adult Education & Extension Service of the University of Missouri—Campus at the University in Columbia, Mo.

April 9—Wisconsin LPGA Spring Meeting—Whiting Hotel, Stevens Point, Wisc.

April 10, 12—Midwest L. P. Gas Service School—Iowa State College, Ames, Iowa.

April 11-12—Illinois LPGA Convention—St. Nicholas Hotel, Springfield.

April 14-15—Nebraska LPGA Annual Convention—Castle Hotel, Omaha, Neb.

April 14-17—American Home Laundry Manufacturers' Association Annual Meeting—French Lick Springs Hotel, French Lick, Ind.

April 21-25—Alabama LPGA Service School—Tuscaloosa, Ala.

April 24-26—Natural Gasoline Association of America 36th Annual Convention—Rice Hotel, Houston, Texas.

April 25-26—South Dakota LPGA Convention—Marvin Hughitt Hotel, Huron.

April 28-30—Mississippi LPGA Annual Convention—Edgewater Gulf Hotel, Edgewater Park, Miss.

May 6-7—Utah LPGA Annual Convention and Trade Show.

May 11—Nevada Liquefied Petroleum Gas Dealers Association Spring Convention—Winnemucca, Nev.

May 12-15—Liquefied Petroleum Gas Association National Convention and Trade Show—Conrad Hilton Hotel, Chicago.

May 20-24—61st Annual Meeting of the National Fire Protection Association—Hotel Statler, Los Angeles, Calif.

June 4-6—Missouri LPGA 12th Annual Convention and Trade Show—Chase Hotel, St. Louis, Mo.

June 26-28—Texas Butane Dealers Association Annual Convention and Trade Show—Moody Convention Center, Galveston, Texas.

August—Alabama LPGA Convention—Mobile, Ala.

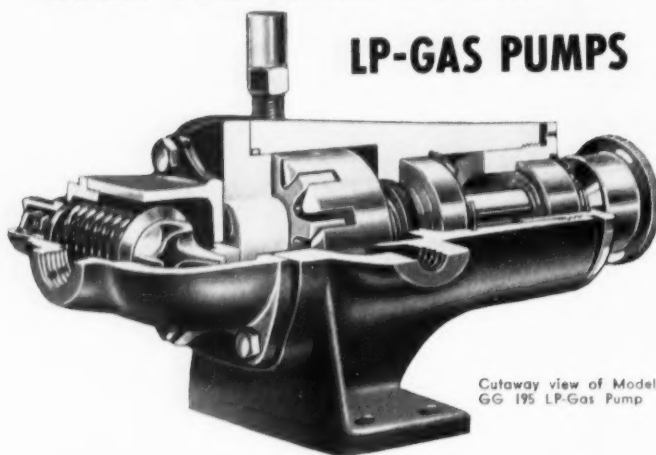
October 7-9—American Gas Association Annual Convention—Kiel Auditorium, St. Louis, Mo.

All associations are invited to send in dates of their forthcoming meetings for this calendar.



WHEN YOU INSIST ON VIKING

LP-GAS PUMPS



Cutaway view of Model GG 195 LP-Gas Pump

➤ No lubrication required. (Eliminates this uncertain chore.)

➤ No leakage. (Features mechanical seal and O-Ring gaskets for non-leak operation.)

➤ No priming devices. (Fast, positive pumping, using Viking's famous "gear-within-a-gear" principle. Eliminates extra gadgets.)

➤ Complete safety of operation. (Equipped with vapor pressure safety valve and safety pressure relief valve. Pump carries Underwriters marker.)

➤ A pump for every purpose. (The Viking line includes 10 sizes, 40 models. One for every LP-gas pumping problem you may have. No compromise in size or type.)



For your safety—all pumps carry this Underwriters marker.

Write today for catalog Hb. Free on request

See our exhibit, Booth 157, LPGA Convention and Trade Show, Conrad Hilton Hotel, Chicago



VIKING PUMP COMPANY

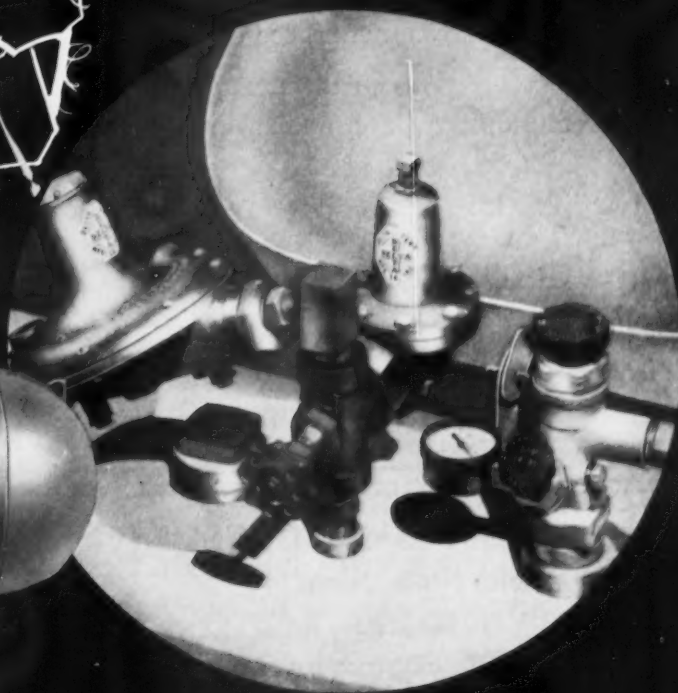
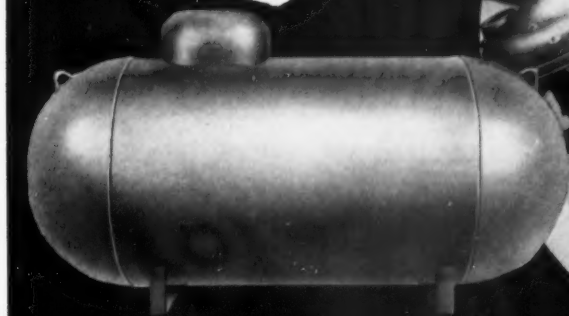
Cedar Falls, Iowa, U. S. A. In Canada, it's "ROTO-KING" pumps

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Other than in cigarette lighters, the flint and steel method of producing fire is a far cry from modern usage. Modern cooking and heating methods are "simply automatic".

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FABRICATORS OF OIL FIELD EQUIPMENT, MATERIAL HANDLING EQUIPMENT,
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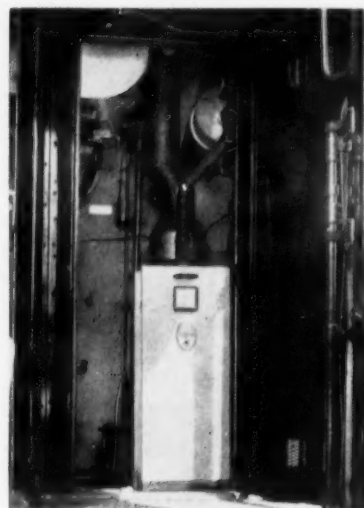
BUTANE-PROPANE
News

L. P. gas boilers take to the rails

SEVERAL Bryant Model 26 L. P. gas-fired hot water boilers have been heating three special Great Northern business and instruction cars for several years.

Unlike conventional passenger cars, these cars often are not a part of any train, but are rather shuttled from place to place where they are "set out" on a siding.

In days gone by, when one of these cars was "set out," heat was



A close-up view of the "traveling" Bryant L. P. gas boiler. When it's "parked" on a siding, the boiler heats a water and anti-freeze solution that is circulated through the car's piping by electric pumps.

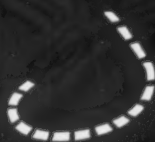
provided by a hot water system using a coal-fired stove. But not any more.

While remodeling and modernizing these cars in St. Paul, Minn., Great Northern designers sought a more efficient heating unit. Roy H. Whitesell, Bryant distributor in Minneapolis, worked closely with them to perfect a system that combines reliability with low cost operation. Filling the bill in each car is a Bryant boiler that operates for more than 24 hours on one tank of bottled gas, even in sub-zero weather.

4 ways

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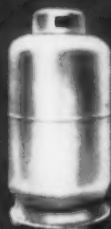
END
costly
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hauling



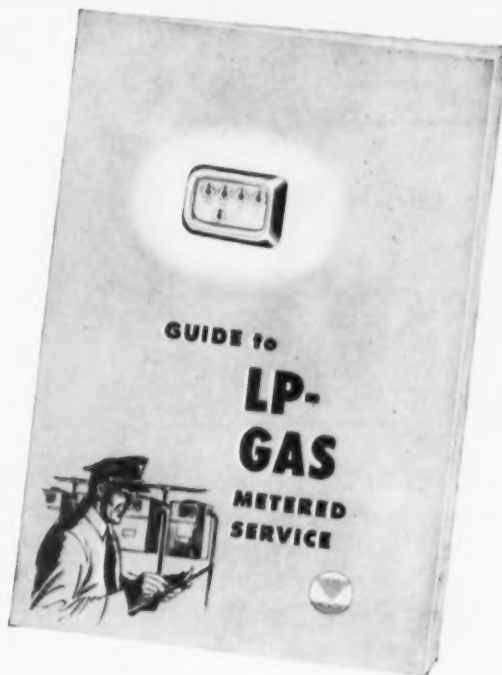
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extra
storage
capacity



REDUCE
multi-service
installation
costs



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customer
confidence



FREE Manual — Gives complete information on handling, storing, installing, sizing and testing LP-Gas Meters.

Write today for this valuable manual that shows how you can make extra profits with American LP-Gas Meters, give your customers "City-Type" service and reduce your costs as well.

American LP-Gas meters are precision instruments designed for accurate measurement from pilot burner to full load. Built with the same care that has made American Gas Meters the accepted standard of accuracy, performance and long life in the Gas Industry for 120 years.

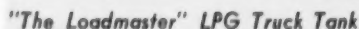
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Calgary • Edmonton • Regina

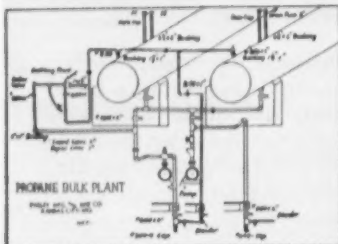
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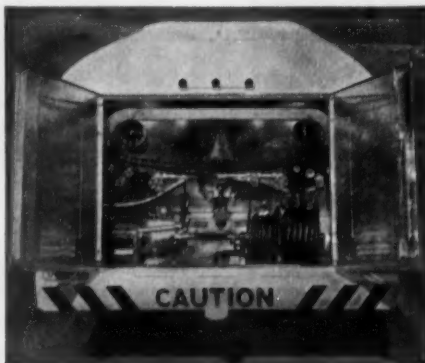


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The system employed provides enough gas for a week. Furthermore the Great Northern stocks L. P. gas at a number of points on its system, and it's also available from local dealers throughout the railroad's territory. ■

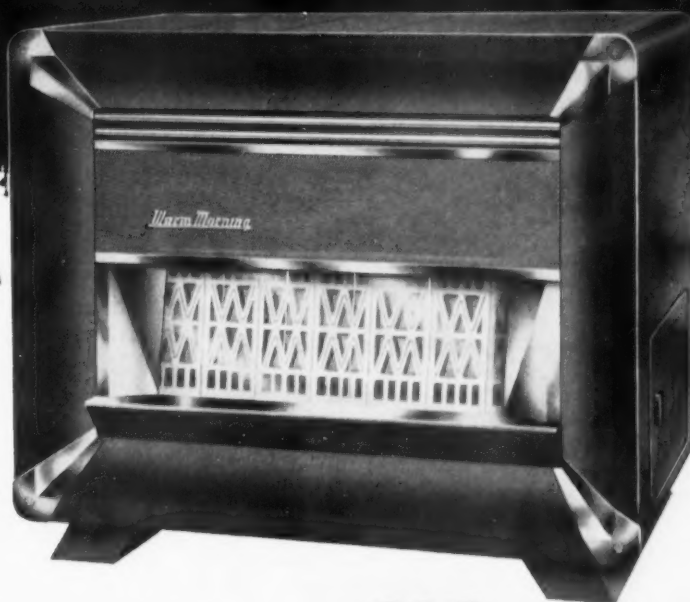
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Introducing America's Most Sellable *GAS* Heaters



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50,000 BTU Input
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THE NEWEST CONCEPT IN *GAS* HOME HEATERS

★ Picture Frame Styling

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WARM MORNING steps out in front for 1957 with a terrific, all-new line of vented gas heaters that will set the pace for beauty, performance and value! A full range of sizes is offered — from 20,000 to 85,000

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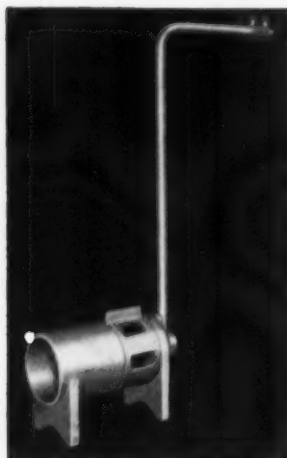
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Only a full color catalog does justice to the distinctive, modern beauty of the new WARM MORNING vented gas heaters. Send for your FREE copy and dealer prices today. Just a postcard will do.

Warm Morning

A QUALITY LINE OF GAS & COAL HEATERS & GAS INCINERATORS

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THE NEW *Weldit* MELTERAMA

WITH REPLACEABLE
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The T-3 MELTERAMA, used with the Weldit 4826-D Safety Check or High Pressure Regulator, gives instant, clean, controlled heat for all melting operations. Incorporating base and burner into one unit gives Stability and Convenience, and Weldit's revolutionary replaceable Burner Orifice adds efficiency and longer life. High and Low Heat Control.

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B-1 WELDING JET SUPERHEATING TORCH



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associations

'How to sell and collect' will spark WLGA meeting

How to sell L. P. gas, appliances and conversions and how to collect your money after the customer is sold will highlight the educational program of the Western Liquid Gas Association's eighth annual meeting and trade show which takes place April 4, 5 and 6 in Los Angeles' Statler Hotel.

Both parts of the two-fisted educational program will be handled by "men who should know." Carl Abell, editor of BUTANE-PROPANE News, will lead a panel discussion on sales methods aimed at giving LPG dealers the straight information on how to close a sale. Editor Abell, famed for his participation in LPG association programs from coast-to-coast, has invited a special group of top authorities to sit on his panel and to answer dealer questions.

But after the dealer makes the sale, he has to collect his money. Exactly how to accomplish this—while increasing business—will be described by credit and collection expert William E. Locke. Mr. Locke is well-known to dealers especially on the west coast. He has case histories to prove his points.

George Putnam, radio and television newscaster, keynotes the two-day convention which will include industry leaders E. S. Kleinman of Dearborn Stove Co.; E. Carl Sorby, vice-president of George D. Roper Corp. and president of the National LP-Gas Council; and Tom Arden of the Robertshaw Co.

Separate luncheons have been planned for the men and women and a special ladies program is scheduled.

The trade show takes place in the Wilshire Room of the Statler and large units and equipment will be displayed in a parking lot across from the hotel.

Hospitality hours, dinner, dancing and a show such as can be

A MASTER TANK

IS A *Masterpiece of Safety*



Domestic systems by Master are high quality products you can depend upon because of Master Tank & Welding's years of experience in building better, stronger, safer tanks. Only the highest quality materials, the most advanced engineering, and the finest workmanship are used in constructing a Master tank. From the largest to

the smallest, there's a Master domestic system to fit your particular need — all sizes and capacities through 1,000 gallons. Master tanks are constructed of double welded Hi-Tensile steel to meet ASME Code construction. Inspected by Hartford Steam Boiler Inspection and Insurance Company.

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arranged only by an association meeting in the Hollywood area are promised by convention chairman C. R. Usher, American Liquid Gas Co.

Three-part service school highlights Michigan meet

Approximately 200 people attended the tenth annual convention of the Michigan LPGA held at the Hotel Statler, Detroit, January 20-22.

Servicing controls, proper venting, and the ABC of L. P. gas regulators made up a three-part service school. Frank Waindle, products service division, A. O. Smith Corp., instructed the dealers in the proper servicing of controls; Don Boch, Metalbestos Corp., showed proper venting methods; while Fisher Governor Co.'s A. C. Lisk, presented the ABC's of L. P. gas regulators.

Mrs. Ann Clemons, professor of home economics, University of Kentucky, told the dealers how "The Home Economist Looks at L. P. gas." She also gave the ladies many helpful hints at their luncheon on Monday.

The new top burner control was emphasized by William Bowman, Robertshaw-Fulton Controls Co., and the National LP-Gas Council's film, "The Modern Way, Naturally."

Donald J. Failor explained how the dealer may benefit from the many services of the Small Business Administration; "Gas Air Conditioning," its importance and continual gain in sales was highlighted by R. K. Eskew, Servel, Inc.

Three important fields of load building—use of LPG in tar kettles, the industrial truck load, and the incinerator market—were presented to those in attendance.

Alton Berquist, Hot Flame Gas Co., was elected president of the group. Vern Becker, Becker Bottle Gas Co., was elected vice president; and J. O. Gower remains as secretary-treasurer.

Directors include Charlie Gunter, Fuel Gas Co.; Maynard Smith, Suburban Bottle Gas Co.; M. R. Frank, past president of the association; Russell Mueller, Fred Koehler, and Clark Olson.

Plans nearing completion for national convention

Arrangements for the national LPGA convention and trade show, planned for May 12 to 15 in Chicago's Conrad Hilton Hotel, have shifted into high gear with announcement that almost all of the 240 exhibit booths have been sold out.

"Partners in Progress" is the guiding theme for the 1957 convention which will stress the profitable partnership of marketers and suppliers.

The need for cooperative gas promotion between LPGA dealers and gas utility companies was set forth at last year's Chicago meeting, so Jack H. Mikula, who heads the newly-formed Gas Unity Committee, will report on how that need is being fulfilled. Mr. Mikula is responsible for the highly-regarded cooperative promotion program in the Milwaukee area in which his firm, Milwaukee Gas Light Co., has joined hands with LPG dealers.

Selection and training of retail salesmen will be outlined by Gerald T. Owens, Memphis (Tenn.) sales consultant. Both Mr. Owens and Mr. Mikula will address general sessions.

The Marketers' Section program, under the direction of Marketers'

Section Chairman Forrest Fram, will cover four points:

1. Management responsibilities today which call for a re-evaluation of policies on costs,

2. load building,

3. the partnership between marketers and suppliers in the fields of storage and off-peak sales, and

4. development of special sales programs that meet 1957 industry conditions.

An informal "What's Your Problem?" session, based on letters received from marketers by the LPGA, will be chaired by Mr. Fram. Proven solutions by companies which have met the problems will be discussed.

The traditional banquet and the 1957 version of Gas Flame Gaieties are being billed as "don't-miss" items and will close the convention.

Hartzell joins Council as field representative

John Hartzell of Houston, formerly associated with a leading public relations agency in that city, has joined the staff of the National LP-Gas Council as a field representative it was announced by A. H. Cote, council president.

For the past eight and a half years, Mr. Hartzell has been an account executive with the Max H.



John Hartzell

Jacobs Agency of Houston. During that time he has worked on a number of oil and gas, and other industrial accounts.

He attended Pennsylvania State College and was graduated from the University of Missouri with a degree in journalism.

He entered the Army in 1941 and served almost five years in the Signal Corps; where he became a captain.

Early in 1946 he joined the Denver Bureau of the United Press Association, and later became manager of the UP Houston bureau. Mr. Hartzell left United Press in 1948 to join the Max H.



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WEATHERHEAD

...all the way

Your
ONE
COMPLETE
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for all
YOUR
LP-GAS
EQUIPMENT
NEEDS

Whether you need one cylinder or a carload... a regulator or a complete system package... Weatherhead is the only manufacturer supplying all items needed for a complete bottled gas system.

Here's what one-source supply means to you: All Weatherhead LP-Gas equipment is factory assembled, factory tested and guaranteed for quality. A complete selection of Weatherhead equipment is available for immediate shipment from stock. And best of all the Weatherhead package is complete with long term financing.

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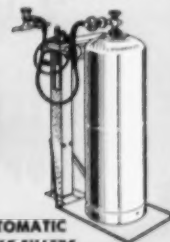
A five year finance plan is available on 100 lb. cylinders and complete bottle gas systems. Or, you can lease 100 lb. cylinders for a small annual rental. Leased cylinders may be purchased at depreciated value anytime during lease period.



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AND 20 - 33 1/2 - 43 1/2 LB.
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Jacobs Agency, a public relations firm.

Mr. Hartzell was a member of the Press Club of Houston and was active in affairs of the Texas Gulf Coast Chapter of Sigma Delta Chi, professional journalism fraternity.

More than 1000 attend Northeast LPGA meeting

More than 1000 registrants attended program sessions at the Hotel New Yorker and saw the trade show at the New York Trade



Before William H. Cove addressed the opening session of the Northeast regional meeting of the LPGA in New York, February 12, K. H. Dickson, National LPGA president, tells him how the L. P. gas industry has been growing. John D. Stone (right) of Gas Inc., Lowell, Mass., was general chairman of the meeting and trade show held February 12-14. About 1200 registered.

HANSEN

QUICK-CONNECTIVE 2-WAY SHUT-OFF COUPLINGS!





QUICK CONNECTION
AND
DISCONNECTION



INSTANT
AUTOMATIC FLOW
OR SHUT-OFF



**Seals Both Ends of Line
AUTOMATICALLY
INSTANTANEOUSLY**

*Quick Connective
Fluid Line Couplings for*

AIR • OIL • GREASE • STEAM
HYDRAULIC FLUIDS • VACUUM
REFRIGERANTS • OXYGEN
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WATER • COOLANTS

HOSE CLAMPS
HOSE CLAMP PLUGS
HOSE CLAMP SOCKETS
HOSE CLAMP COUPLINGS

To connect a Hansen Two-Way Shut-Off Coupling, you just pull back the sleeve and push the Plug into the Socket. To disconnect, merely pull back sleeve. No tools required. Similar valves in Socket and Plug shut off both ends of line when Coupling is disconnected—practically eliminate spilling of liquid or escape of gas at instant of disconnection.

FEMALE PIPE THREAD CONNECTIONS FROM 1/8" TO 1"

Hansen Series HK Two-Way Shut-Off Couplings are available with female pipe thread connections from 1/8" to 1" inclusive. Available in brass or steel.

*Also Straight-Through and One-Way
Shut-Off Couplings. Write for Catalog.*

REPRESENTATIVES IN PRINCIPAL CITIES

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QUICK-CONNECTIVE FLUID LINE COUPLINGS

THE HANSEN MANUFACTURING COMPANY

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Show Building during the recent three-day third annual convention and trade show of the Northeast LPGA held in New York City.

"New Horizons in Your Business" was the theme for the convention and show which provided the high percentage of dealers who attended with an insight of what's ahead.

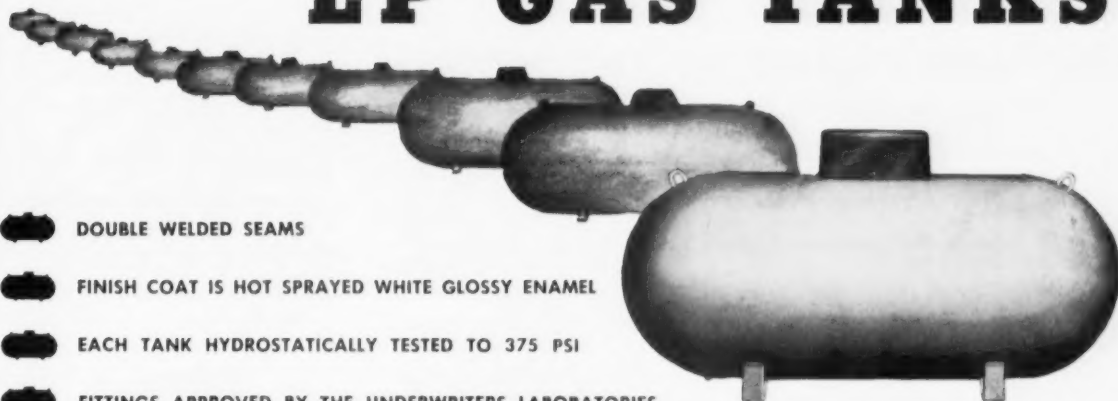
"Seventeen Steps to Better Selling" were provided by C. S. Stackpole, managing director of the AGA. The 17 steps:







1. Work closely with architects and builders.
2. Develop good sales training programs.
3. Emphasize safety in your operation.
4. Hire a home economist.
5. Cultivate young people in schools and colleges.
6. Keep modern gas equipment available for schools and colleges.
7. Use AGA members for help and consultation.
8. Enter community shows and join local community enterprises.
9. Cooperate with all gas appliance dealers.
10. Provide good service.
11. Use direct mail.
12. Make use of manufacturers for help.
13. Recruit young people in your business.
14. Talk GAS.
15. Know your merchandise.
16. Be hungry for business.
17. Be aggressive.

Others on the program included LPGA President Ken Dickson;

For Immediate Delivery

LP GAS TANKS



-  DOUBLE WELDED SEAMS
-  FINISH COAT IS HOT SPRAYED WHITE GLOSSY ENAMEL
-  EACH TANK HYDROSTATICALLY TESTED TO 375 PSI
-  FITTINGS APPROVED BY THE UNDERWRITERS LABORATORIES
-  ALL TANKS INSPECTED BY FULL-TIME LICENSED INSURANCE INSPECTOR
-  CONSTRUCTED IN ACCORDANCE WITH ASME CODE FOR UNFIRED BOILERS AND PRESSURE VESSELS

Manufactured By

LONG TANK COMPANY, INC.

PHONE 2126
TARBORO, N. C.

- No mating parts • Non-electrical •
Low pressure drop • Simple to service

● USES: TRUCK LOADING
TANK CAR LOADING
BULK DISTRIBUTION
PIPE LINE SERVICE
REFINERY PROCESS

- PIPE SIZE—2 INCHES
25-200 GPM
6 DIGIT TOTALIZER
SIZE—12x6x6 INCHES WT.—8 LBS.
600 PSI W. PRESS.

Flowmeter
for Bulk L. P. Gas
in continuous, heavy duty service

PATENTS PENDING



● **\$300. net**

immediate delivery

ROTRON CONTROLS CORP.
WOODSTOCK • NEW YORK



PROPANE PLANT OF THE MONTH



ALLIED CHEMICAL & DYE CORPORATION

A combination propane and anhydrous ammonia plant designed and built by Draketown for Allied Chemical & Dye Corporation at La Platte, Nebraska.

Many other large and small manufacturers and utilities rely on Draketown for absolute dependability of gas supply; automatic or manual operation with savings all down the line. Over thirty-five years of gas engineering experience is built into every Draketown Plant.

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Members of: American Gas Ass'n, LP Gas Ass'n, American Petroleum Institute, National Fire Protection Ass'n, Canadian Gas Ass'n, Agricultural Ammonia Institute.

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Heat and vibration-proof, non-solvent, will not shrink, crack or crumble. Makes all assemblies leak-proof and pressure-tight. Prevents rust, corrosion, joint seizure.



At Industrial, Automotive, Hardware, Plumbing Jobbers

RADIATOR SPECIALTY CO.
Charlotte, North Carolina

Frank Lovejoy of Socony Mobil Oil Co.; Arthur E. Bone, president of Eastern Propane Co.; and sales consultant William H. Gove.

A star-studded show highlighted the banquet at the conclusion of the convention.

Pennsylvania utilities pay tribute to GAMA

The Pennsylvania Gas Association honored the Gas Appliance Manufacturers Association, during the midwinter sales conference held at the Benjamin Franklin Hotel, Philadelphia, on January

25, for the spectacular progress of the gas industry which would not have been possible without continued improvement and development of modern gas appliances.

Gordon M. Jones, past president of PGA and director of sales and public relations for United Gas Improvement Co., presented a scroll to Julius Klein, president of GAMA and of Caloric Appliance Corp.

In accepting the award Mr. Klein paid tribute to the utility companies for their work in making possible the development and sale of modern gas appliances.

Mr. Klein pointed out that the utility company and the gas appliance manufacturer come up for judgment together every time anyone contemplates the purchase of a gas appliance or the use of gas as a fuel.

Kentucky LPGA holds eight service schools

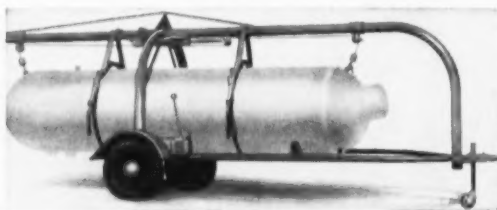
The Kentucky LPGA scheduled eight service schools during February. Each of the schools was held in a separate district of the Association under the chairmanship of the district director.

The program for all the schools was the same, therefore allowing the dealer to attend which ever one was most convenient for him.

The Robertshaw-Fulton service school on controls showed the dealers how to better service controls.

The ever present problem of profits took the spotlight after dinner when James A. Lewis, chairman, L. P. Gas Education, asked "Are You Making A Profit With L. P. Gas?"

Frances L. Holliday, secretary of the Association, outlined "Plans and Progress of the Kentucky LPGA," for those present.



PAT. PEND.

It's FOR YOU
FISK
TANK TRAILER
HYDRAULIC

YES—ONE MAN—CAN FRISK your tanks with a FISK trailer. Simple to operate and maintain. The hydraulic system does all the work. Save muscles—time and money. Fisk will transport tanks up to 1260 w.g.

PRICED WITHIN YOUR REACH—WRITE TODAY

FISK TRAILER SALES • Western states distributor to be appointed soon.
Mounted route #26, Fond du Lac, Wisc.

J. Ray Humkey, state fire marshal, told the dealers what they would have to know in order to pass the "Servicemen's Examinations."

National Council appoints Kleinmann PR chairman

Erwin S. Kleinmann, vice president in charge of sales for the Dearborn Stove Co., Dallas, Texas, has been appointed public relations chairman of the National LP-Gas Council.

In announcing Mr. Kleinmann's appointment, A. H. Cote, Council president, pointed out that the sales executive is "the ideal man



E. S. Kleinmann

to guide a PR program which has as its aim increased sales of L. P. gas and appliances."

Mr. Kleinmann joined Dearborn Stove in 1940. During World War II he served in the air force. In 1946 he was appointed regional sales manager for Dearborn in San Francisco and in 1949 was transferred to Dallas as assistant to the general sales manager.

A year later Mr. Kleinmann became sales manager of the southern division and in 1954 was appointed to his present position.

LPGA secures Washington representative

The LPGA has secured the services of J. M. Chambers & Associates, as its Washington representative. The firm is headed by Mr. Chambers who has been a Washington representative for the past few years.

Mr. Chambers will handle assignments given him by the LPGA's national affairs committee, consisting chiefly in securing commercial information from federal departments and in explaining the L. P. gas industry's services and requirements.

The Chamber firm's appointment follows a decision by the association board at its December 1956



**The stoutest pipe vise
... with built-in
folding legs and tray**

RIGID Tristand Pipe Vise

**Extra easy to fold up, carry
and set up ... Extra strong,
extra rigid in use**

Most service and durability for your money! Integral legs and tray mean quick easy fold-up for carrying and set-up for work—provide solid stance, greater strength. Vise base is roomy, has ceiling brace screw, pipe benders, slots for tools. Special LonGrip jaws grip tight without chewing up pipe. Save work—see it, try it, buy it at your Supply House.



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yoke model.
Chain model
also available.**

The Ridge Tool Company, Elyria, Ohio, U. S. A.



the Broyhill
HANDI-HEATER

a bottle gas stock tank heater



FITS ANY TANK
LIGHTS QUICKLY
AND SIMPLY.

- Fits any tank and lights quickly and simply
- Safe. A.G.A. approved automatic shut-off and temperature controls
- Easily installed on any wood, metal or concrete tank
- Dependable—operates efficiently in sub-arctic weather

A blast furnace of heat striking 4 sides of the heat chamber

OTHER QUALITY

Broyhill FARM EQUIPMENT

- Spraying Equipment
- Liquid Fertilizer Applicators
- Liquid Fertilizer Injectors
- Trailers and Self Propelled Hi Clearance Wagon Hauls
- Aluminum, Rubber lined and Steel Tanks

Broyhill COMPANY DARTON CITY, NEBRASKA

RECTORSEAL NO. 2



THIN IN CAN . . . THICK IN JOINT for maximum sealing efficiency

There's no seal like RECTORSEAL. It is especially compounded to be thin and smooth in the can for complete use of every drop and greater ease in application. It thickens in the joint to a plastic elasticity that means maximum sealing efficiency against L.P. gas leaks . . . yet always easy to break out.

In addition to positive leak prevention, Rectorseal No. 2 is cleaner to use . . . it is more economical because there's no waste . . . doesn't settle out. See for yourself how Rectorseal's plastic elasticity gives threaded connections the best protection money can buy. Brush-top cans sealed with cellulose tape to assure Rectorseal's factory freshness.

Write for your **FREE SAMPLE** today giving name of your jobber.

RECTORSEAL, DEPT. A
2215 Commerce St., Houston 2, Texas

RECTORSEAL # 2

MAKING THE GAS INDUSTRY SAFER

meeting. Until this time Chicago staff people have handled Washington contact work by making specific trips as conditions warranted.

The new service allows virtually continuous contact with agencies whose understanding of industry problems will benefit L. P. gas marketing and supplier operations throughout the country, national affairs chairman E. O. N. Williams said when he announced the appointment.

A law graduate of National University, Washington, Mr. Chambers was personnel director of the Maritime Commission when he joined the Marine Corps. in 1940. In 1946, when he was retired as a colonel, he became an advisor to the Senate armed forces committee. Later he was assistant administrator of the Federal Civil Defense Administration. Since 1954 he has been doing Washington contact work.

Compressed Gas Assn. publishes new brochure

A new brochure has been published by the Compressed Gas Association Inc. It describes the organization's purposes, accomplishments, organizational structure, and the functions and work of its various committees.

The membership of the Compressed Gas Association includes such firms as the gas manufacturers, steel processors, manufacturers of storage tanks, cylinders, and containers, valves and fittings, transporters by rail, truck, and water, the various engineering groups, etc.

Copies may be had by addressing the Compressed Gas Association Inc., 11 West 42nd St., New York 36, N. Y.

Dushane is chairman of gas consumer ad unit

C. Benson Dushane, American Meter Co., has been elected chairman of the Gas Equipment Manufacturers Committee. The committee, made up of manufacturers whose products ordinarily are not sold directly to consumers, conducts the "GEM" program to advertise the advantages of gas appliances and household gas service.

Other officers of the committee have been named as follows: vice chairman, K. R. D. Wolfe, Fisher

Governor Co.; operating committee members, G. T. Bowman, Rockwell Manufacturing Co.; C. H. Abbott, Sprague Meter Co., and Carl N. Brown, U. S. Pipe & Foundry Co.

Farm families save on fire insurance with L. P. gas heat

"Eight cents per hundred of the rate for fire insurance on farm property may be deducted in Kentucky," according to State Fire Marshal J. R. Humkey, "if the residence or farm building is heated by gas fuel connected to approved Type 'B' vent."

This deduction in fire insurance rates for farm buildings became effective October 1956.

A further credit is provided in the event a dwelling has a central heating plant provided with thermostatic controls and meets certain other requirements, according to Mr. Humkey, after a conference with officials of the Kentucky Inspection Bureau.

Both the office of the state fire marshal and the bureau are recommending that all such appliances be approved type, safely installed in all respects, concerning mounting and clearances as well as venting.

This reduction in fire insurance rates for L. P. gas farm customers was first brought to the attention of officials of the Kentucky LPGA in the case of lower fire insurance rates for a farm customer following the installation of a thermostatically-controlled floor furnace, connected to a Type "B" vent.

Kentucky L.P. Gas News

Speed is the number one cause of traffic deaths, the National Safety Council reports. Second greatest killer in urban areas is failure to yield the right-of-way, while crossing the center line is the second greatest cause of fatalities in rural areas.



Butane, Propane

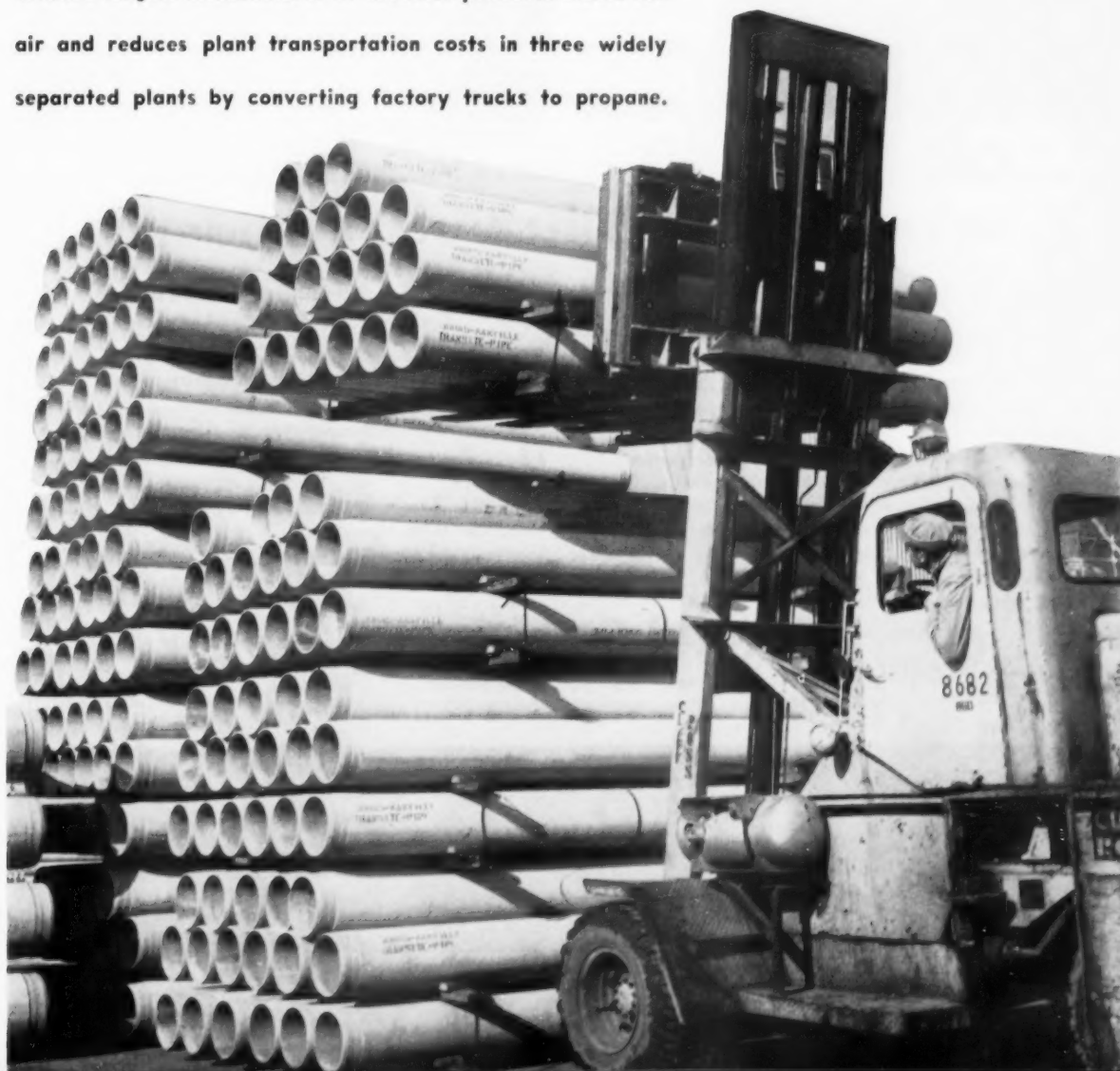
POWER

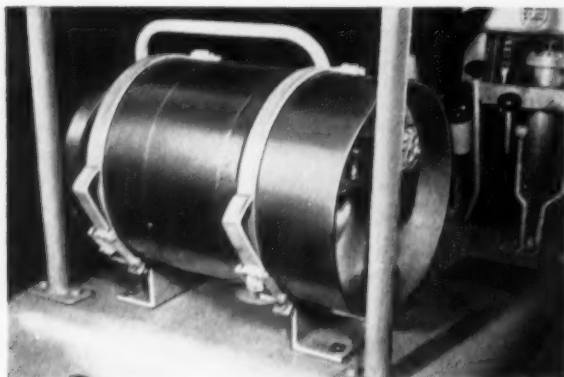
**CARBURETION • INSTALLATION
• SERVICING**

POWER SECTION

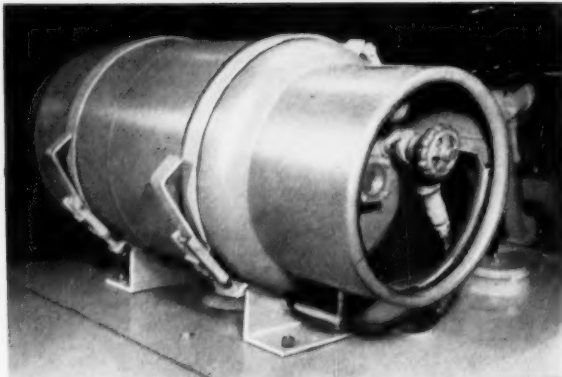
Less fumes, less cost, says Johns-Manville

World's largest manufacturer of asbestos products clears the air and reduces plant transportation costs in three widely separated plants by converting factory trucks to propane.



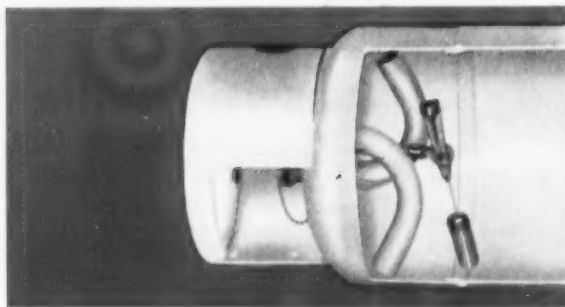


Typical cylinder installations. Note "smooth-grip" double curled handle. Four standard sizes of removable ICC cylinders available: 14-, 20-, 33½- or 43½-pound capacity (propane), in vertical and horizontal models. Permanently mounted ASME tanks also available.



Sturdy dip tubes won't break loose from vibration. Smooth, scale-free interior. Accurately designed gauge.

Universal multiple spud permits any valve arrangement. Cylinders also stocked with filler valve and maximum liquid level gauge.



Cash in on the new LP-Gas market with HACKNEY lift truck cylinders

The big switch is to LP-Gas for lift trucks. More and more operators recognize LP-Gas as the fuel that boosts engine efficiency, reduces maintenance and fuel costs, eliminates objectionable exhaust fumes. By selling Hackney LP-Gas cylinders to lift truck and tractor owners, you're tapping a big source of profitable sales.

Hackney lift truck cylinders practically sell themselves! They're built extra strong without extra weight, and are designed for easy servicing. The complete Hackney line includes both removable cylinders and permanently installed cylinders. Eight models available for prompt shipment from stock.

Write for additional information.

Preferred design features boost lift truck cylinder sales

- Comply fully with requirements of NBFU Pamphlet No. 58, and ICC-4B and 4BA-240 specifications.
- Two-piece construction with single circumferential weld for extra strength without excess weight.
- Ruggedly built. Special protective collar safeguards valves.
- Standard models provide liquid service, relief valves and visible float gauge.
- Conveniently grouped valves and fittings for fast, easy servicing.



Pressed Steel Tank Company

Manufacturer of Hackney Products

1487 South 66th Street, Milwaukee 14, Wisconsin

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LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS



cylinders



systems



fuel tanks for
trucks and tractors



lift truck tanks

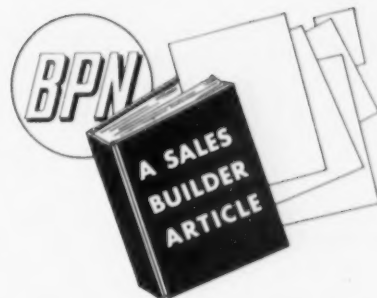


tank trucks



bulk storage tanks

Here's why Johns-Manville is rapidly converting its industrial trucks to propane



The first forklifts converted at the Waukegan plant had removable fuel tanks.



The warehouse atmosphere is clear in spite of the constant operation of trucks.

By CARL ABELL
Editor

JOHNS-MANVILLE CO., world's largest manufacturer of asbestos products, is well on its way toward becoming one of the largest users of propane power in its factory, warehouse, and production fleets.

The plant fleet at the company's largest factory at Waukegan, Ill., has been on propane for some time. The other main plant at Manville, N. J., is now almost entirely equipped, the company's Transite factory near Long Beach, Calif., has recently converted all of its gasoline equipment, and test vehicles are operating on propane at the big diatomaceous earth quarries near Lompoc, Calif.

The most complete service records in the organization were offered by the Waukegan plant. This was partly because of an early

start, also because the entire fleet has been on propane for a longer time, and because it is the largest fleet operated by the company.

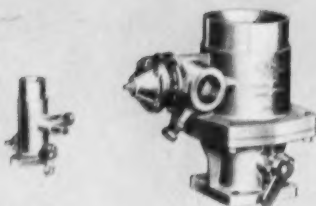
The Waukegan plant is located on a 265 acre tract. It consists of 12 manufacturing buildings, three warehouses, and the office building, for a total of 60 acres of floor space. There are extensive outside storage areas for materials and products, dumps and scrap yards. These are connected by several miles of private roads and served by a private utility system and a private fire department located inside the plant. Construction and maintenance of these facilities, and maintenance of the plant fleet are in charge of Richard L. Lewis, chief industrial engineer.

Mr. Lewis became interested in the use of propane in the plant

fleet some time before it became popular for that purpose. The actual start of the conversion program began in June, 1953, when their first experimental job was placed in operation under close study. For this purpose a Clark forklift of 7000 lb capacity was selected, and equipped with Beam carburetion. This test was continued for one year.

Analysis of the record of this test unit resulted in the decision to convert the entire factory fleet. This consists of 102 units—every in-plant vehicle except the small units used in the solvent room.

Included in the forklift fleet are Clark, Elwell-Parker, Ross, Yale and Hough Palletloaders. The largest of these is a Clark-Ross forklift with 78,000 lb capacity. The converted yard equipment includes



from the Smallest to the Largest

ALGAS

the most
complete line

OF **LP-GAS** CARBURETION
EQUIPMENT...

ALGAS dependability and economy have been proven in thousands of applications. Whether it's a tiny carburetor for a small single or multiple cylinder engine, for use in truck refrigeration units or a giant sized carburetor for use on large industrial engines, ALGAS can meet every requirement. In an ever increasing number of new and different applications you will find ALGAS LP-Gas carburetion systems proving their superiority again and again. Whenever you think of LP-Gas think of ALGAS and you'll choose the best.

ALGAS Also Engineers and Manufactures LP-Gas Plant Equipment. For industrial stand-by use, peak-load shaving or municipal use, ALGAS LP-Gas plant equipment is specifically engineered, manufactured and installed to meet any load requirement from one thousand to several hundred thousand gallons capacity. ALGAS also offers a complete line of LP-Gas Vaporizers, Vaporizer-Mixers or Mixers only for use by industry and utilities. *In Europe see: Campagie General de Construction de Fours—Paris, France.*

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Montreal: Bescom Corp. Ltd.

In Holland
N. V. Technisch Bureau, MEDIA

AMERICAN LIQUID GAS CORP. 1109 SANTA FE AVENUE—LOS ANGELES 21.—TRINITY 0845

a Unit crane with Chrysler 8-cyl industrial engine, International Harvester trucks and an Allis Chalmers road grader.

The first 35 units to be converted in this fleet were equipped with spud-in carburetor conversions, utilizing the working parts of the gasoline carburetors that were already on the engines. Other tests conducted during this period showed that more accurate metering was obtained by using a straight propane replacement carburetor, so these were used on the remainder of the fleet. A better air - fuel - ratio was obtained throughout the operating range than had been possible with the adapted gasoline carburetors. This contributed to smoother operation, better economy of fuel, and minimum production of carbon monoxide in the exhaust.

The customary practice in converting a fleet is to put the propane equipment on engines that are known to be in good condition. Those in need of rebuilding are generally overhauled before installing the LPG units. This practice was not followed on the Waukegan fleet.

Mr. Lewis had learned, from outside investigation, that the fuel would do the job, and that if an engine gave trouble after conversion it was most likely because the engine needed work and would have required attention if it had been running on gasoline. He wanted to accomplish the change to propane without loss of time, and with a good maintenance shop

on the premises those engines that needed work could be put through on their regular schedule. Thus the flow of work through the shop was not interrupted. Some engines were in poor condition when converted, but even so their perform-

ing up" it was decided that the gains did not justify the cost of raising the compression ratio.

It has now been nearly three years since Johns-Manville started the complete conversion of this fleet. Certain gains have been ac-



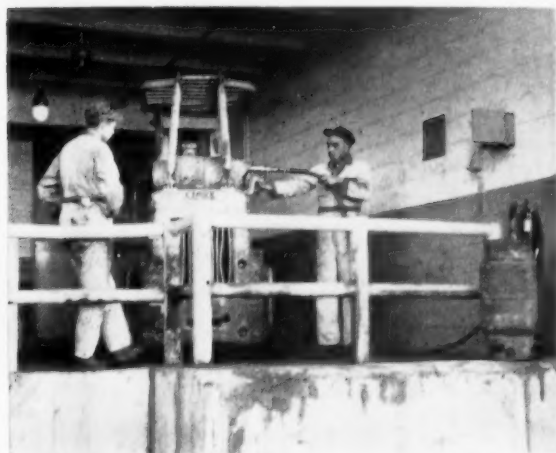
Recently purchased trucks were broken in on gasoline then converted to propane.

ance compared favorably with their pre-conversion performance.

Several of the engines were high compressioned at the time of overhaul, and the results carefully compared with similar engines with standard compression ratios. Since all of these indoor jobs were amply powered without any "soup-

curately evaluated. In other respects they know that gains have been made but the full importance has yet to be determined. In the first category is fuel cost.

The converted rigs give almost the same number of hours per gallon on propane as they did on gas-



Indoor trucks come out on this open dock for fuel.



Outdoor trucks are fueled in driveway next to dock.

oline. The cost of propane is 9.7 cents less per gal. Maintenance costs when the fleet was burning gasoline averaged \$1500 per vehicle per year. Experience to date indicated that this cost will be at least cut in half through the use of propane.

One of the company's 6000 lb capacity Clark forklifts was made the subject of a special study of engine wear. The Continental engine in this truck was torn down for complete examination after 13,000 hours of operation on propane.

The wear on the pistons and cylinders was so slight in this engine that reboring was unnecessary, and the original pistons were put back in.

This is the equivalent of nearly 300,000 road miles, and the operating conditions of forklifts do not give as good engine mileage as we are used to in highway vehicles.

Their shop records also indicate an important gain that was not at first expected. The rate of wear on all power transmission units down to and including the tires appears to be less than it was when the engines ran on gasoline.

They attribute this to the noticeably smoother operation of the engines in the low speed and accelerating ranges. Rough engine operation always puts shock loads through the power train. These impacts disappear or are greatly reduced as the engine smooths out. They attribute this improvement to the better manifold distribution with the pre-vaporized propane, and to the noticeably cleaner combustion which results in elimination of spark plug fouling.

Emmett G. Cosgrove, foreman of truck repair at the Waukegan factory shop, points out the longer life of spark plugs and less frequent need for cleaning in discussing the effect of propane on routine maintenance work.

Gasoline carburetors were formerly a source of frequent annoyance and expense, as they often required boiling out and rebuilding. The propane carburetion systems require almost no work, and



First conversion at Manville, N. J., plant is made by garage mechanic Frank Pokol under supervision of factory representatives (in white coats).

electrical tune-ups have been considerably reduced.

Life of lubricating oil has been greatly extended.

When operating on gasoline it was necessary to change oil twice each month because of rapid sludging. Since the fleet has been on propane the drainage period has been extended steadily as experience proved it possible. They now consider that it is practical to operate on a twice-a-year drainage schedule.

Because of the reduced engine wear and cleaner engine conditions, several shop tools that were frequently in use when operating on gasoline no longer seem necessary.

The ridge reamer which was used to clean the caked carbon off the cylinder walls above the top of the piston stroke when overhauling engines using gasoline has not yet been needed on a propane engine.

Several new units have been added to the fleet since the conversion to propane. These could have been delivered with factory-installed propane systems, but Mr. Lewis prefers to have them come with gasoline fuel systems. He believes that there is an advantage in breaking an engine in on gasoline.

The rate of wear with propane

is so slight that it takes an abnormally long time to lap the piston rings and cylinder walls down to the proper smoothness. With gasoline the break-in is accomplished in much less time. There is also a saving in first cost. Conversion expense in the Johns-Manville shop is approximately \$230 for parts, plus about eight hours of labor. By making their own conversions they also keep the new jobs uniform with their own fleet. This simplifies the maintenance problem by making it necessary to stock parts for another brand of carburetor and train mechanics for its maintenance.

The first installations at the Waukegan plant were made with removable fuel tanks. After it became clear that the entire fleet would be converted it seemed better to use permanently mounted vehicle tanks and build a service station to which the trucks could be driven for refilling.

The filling station is centrally located, and a trained attendant is on duty whenever the plant is operating.

Fuel comes from four 1000 gal. tanks located well away from the buildings. These are leased from Phillips Petroleum Co., and will be replaced in the near future with an 18,000 gal. tank. Piping, pump and dispenser were installed by Johns-Manville at a cost of

\$2500—not a large investment for servicing 102 vehicles.

Conversion of the factory forklift fleet at the Manville, N. J., factory was commenced about a year and a half ago. Principal reason for the change was to keep the air in the manufacturing and warehouse buildings free from gasoline exhaust fumes.

Pollution of the air had become a serious problem to employee morale as the number of forklifts operating in the buildings increased over the years. It is believed that the change to propane has resulted in increased production efficiency because of the improvement in the factory atmosphere.

Conversion at the Manville plant included all 78 of the industrial trucks that work in the buildings. Installation was made at the company's general erection and repair garage under the supervision of Foreman Ben Fedele. No changes were made in the engines except to take off the gasoline equipment and install the propane fuel systems. No unusual operating problems have been experienced, and the power appears to be almost equal to that on gasoline. The operators like the change because the engines are so much smoother than before, and because the low speed acceleration is better on account of the smoothness. The factory air is cleaner than it has been in years, and exhaust fumes are noticeably absent even when starting the engines.

The Manville factory management thought it best to make one

firm responsible for the complete propane installation including the fuel supply system and the conversions. The Peacock Corp., Westfield, N. J., was selected because they were able to design and install the fuel storage and dispensing system, supply the carburetion equipment, and train the E & R garage staff in making the conversions.

The main storage tank is located in a portion of the factory tract that is out of the way of any contemplated expansion of the buildings. A trailer-mounted 500 gal. tank is used to take the working supply to a centrally located spot convenient for filling the vehicle tanks. This is equipped with an electrically driven pump and meter, so accurate records of fuel consumption can be kept for each vehicle. Dispensing of fuel is in charge of employees specially trained by the Peacock Corp.

Savings in fuel cost have not been spectacular at this plant because of the higher delivered cost of the fuel compared with the price in the Waukegan area.

In all other respects the Manville operation seems to be repeating the history of the Waukegan fleet. There has been a noticeable reduction of maintenance work in connection with sparkplugs, ignition systems and carburetors. It is still too early to gauge the reduction in engine wear and overhaul requirements, but the same cleanliness of oil, freedom from combustion deposits, and longer time before oil needs changing are apparent.

The garage staff can now devote more time to planned maintenance operations, since they have fewer emergency overhauls to contend with. The indoor vehicles have been doing so much better on propane that the company decided to convert the 15 Ford and Chevrolet trucks that handle the local and yard transportation.

More recently the Johns-Manville Transite factory at Long Beach, Calif., completed the conversion of its fleet of 26 forklifts and two dump trucks.

The job was done by Ellis Manifold Co., Los Angeles, using Ensign carburetion equipment. Fuel supply was not a problem, as there was already a large propane standby plant in use at the factory. It was only necessary to connect this up with a dispensing pump located near the main factory buildings. Conversion was completed in November, 1956, and up to the time of this writing, approximately 90 days later, no service calls had been necessary. It is still too early to draw many conclusions, but the fume problem has been licked and there is a definite reduction in fuel costs.

That's the story of Johns-Manville's experience with propane in factory trucks to date—223 units operating in three widely scattered plants.

The change has resulted in saving of transportation costs, elimination of troublesome exhaust fumes, and improved employee morale. They regard it as a good investment. ■



Truck tank is filled from special fuel trailer by Joe Sanislo, attendant in charge.



Transport brings load of propane to storage tank at Manville, N. J., plant.

Industrial trucks —fastest growing power fuel market

THE use of L. P. gas in forklift and other industrial trucks is showing more rapid growth than has been experienced in any other segment of the carburetion field. All of the leading industrial truck manufacturers are now building factory-equipped models. One of the largest manufacturers reports that 50 per cent of current production has LPG equipment. Others report ratios above 30 per cent. The conversion of units originally equipped with gasoline fuel systems is going on all over the country.

This is the first application of LPG carburetion that has been saleable in quantity in the New England and Northeastern industrial states. Saving of cost is not the most important sales point. The reduction of objectionable exhaust fumes makes the change desirable even in areas where LPG costs more than gasoline. The users get part or all of the extra fuel cost back in decreased maintenance costs. And where there is a saving in fuel cost—which is a very large part of the United States—the demand is pyramiding.

Rapid growth of the frozen food industry has created a tremendous demand for forklifts that can operate inside the cold rooms without exhaust fumes. The electric truck manufacturers have picked up the lion's share of this business. But this is not pure bliss for the electric truck people. Few of their units can do a full day's work without having the batteries run down. Stopping for a recharge is expensive business. Unless there is plenty of power in the battery the operation is slow, and it becomes still slower if the trucks are in the cold rooms long enough for the battery temperature to drop. A battery loses half of its power in cooling down from 80° to 40°F.

An L. P. gas engine does not lose

power toward the end of the day, and it has just as much "get-up-and-go" in the cold room as it does out in the yard. Halitosis of the exhaust is not a problem with LPG, and if the operator wants to eliminate the last traces of odors and carbon monoxide the catalytic exhaust offers a low cost method. The LPG forklift eliminates both the objectionable exhaust problems and the reason for using the less satisfactory electric trucks.

Production of new industrial trucks of both electric and internal combustion engine types for 1955 and the first ten months of 1956 is shown in the following table. This tabulation lists only the rider type trucks. There are a great many small "hand type" electric trucks in service, which may be included in figures put out by the electric truck manufacturers. These small jobs are not competitive with the gasoline and LPG trucks because the operator has to walk behind the truck, and its load capacity is much smaller.

PRODUCTION OF RIDER TYPE INDUSTRIAL TRUCKS

	1955	
	Electric	Gasoline
January	342	1,449
February	359	1,652
March	425	1,808
April	406	1,647
May	833	3,926
June	533	2,188
July	455	1,961
August	346	2,163
September	441	2,463
October	449	2,569
November	441	2,648
December	520	2,333
TOTAL	5,550	26,843

	1956	
	Electric	Gasoline
January	409	1,777
February	491	1,765
March	503	2,170
April	503	2,232
May	520	2,254
June	533	2,141
July	512	2,725
August	374	2,137
September	442	2,141
October	491	2,191
November	...	...
December	...	...
TOTAL	4,778	21,533

We have not been able to locate any reliable figures on total pro-

duction broken down by types of motive power. A mail survey by a leading trade magazine in the materials handling field provided the basis for the following estimate. This should not be taken as an accurate census, and is included here only to point out growth and trends.

ESTIMATED PRODUCTION OF RIDER TYPE INDUSTRIAL TRUCKS

	Electric	Gasoline
Up to 1945	2700	2700
'45 thru '49	7200	10800
'50 thru '54	21600	50400
TOTAL	31500	63900

POWER NEWS

Now we have 12-volt problems

Use of 6-volt electrical accessories on vehicles with 12-volt systems can lead to some high-powered problems. Beam Manufacturing Co.'s February news letter points out some of them. We quote:

"Use Proper Voltage Valve: A greater number of engines are now using 12-volt ignition. Beam solenoid valves are available in either 6- or 12-volt and the proper voltage valve must be used on each application. A 12-volt solenoid will not open on 6 volts and a 6-volt coil will get too hot and probably burn out if 12 volts are applied. Beam valves use blue leads for 6-volt coils and red leads for 12-volt coils.

"Automobile 12-Volt Systems: When wiring solenoid valves, on late model autos, do not make connection to accessory side of ignition switch because this circuit is automatically cut off when the starter is engaged. Some 12-volt systems have a small resistor between ignition and coil. Connect center terminal of 3-way transfer switch to line between resistor and ignition switch."

IHC has new LPG engine line

International Harvester Co. has started production of a new line of V-8 heavy duty truck engines. Displacements are 401, 461 and 549 cu in.

The LPG versions of these engines have compression ratios

Follow the lead of 8 Big Manufacturers who changed to Century!



THE DEPENDABLE PERFORMANCE of Century Carburetors is being proved daily in the field and on the highway. Their superiority has been proved this year, too, in a series of extensive laboratory and field tests by manufacturers of trucks and tractors. This is evidenced by the fact that eight manufacturers are now installing Century LP-Gas Carburetion as factory standard.

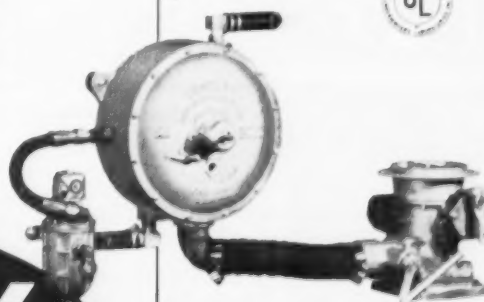
The big difference in Century Carburetors is the metering valve which gives positive control of the gas regardless of changes in temperature or altitude. Century's progressive jet carburetors are calibrated to the engine's performance curve. They provide easy starting, perfect idling and full power.

Follow the lead of these 8 BIG manufacturers for all your conversion jobs. Be sure you give your customers the same performance and dependability by installing Century Carburetion. A make and model for every engine from 5 to 500 h.p. Write for catalog and complete data.

**Demand the
dependability
of a complete
carburetion
system**



CENTURY
LP-GAS CARBURETION



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WE WANT YOUR FILTER BUSINESS

ACTUAL SIZE



The J&S
"ACORN" FILTER
WAS \$6.50 LIST

NOW
\$4.50
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- **BEST BUY** anywhere in cleanable LPG carburetion filters.
- **MICRONITE FILTER** element replaceable at small cost. Resistant to oil, gas, sulphur, water, heat.
- **SMALL, COMPACT, LIGHT WEIGHT**, easily mounted in the copper tubing or with pipe nipple at vaporizer inlet. Base has tapped holes for 5/16" mounting bolts. Inlet and outlet are 1/4" FIPT.
- **UNDERWRITERS' LABORATORIES TESTED** for your protection, and to meet insurance requirements.
- **NEW DESIGN** for mass production enables us to reduce price from \$6.50 to \$4.50, list. Our present supply of aluminum-base filters will be sold at the new price.

"TWENTY-TWO YEARS IN GAS CARBURETION"

J&S

CARBURETOR COMPANY

P. O. BOX 10391

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WHEREVER DEPENDABLE CONTROL
IS REQUIRED ALWAYS SPECIFY

REGO® LP GAS EQUIPMENT

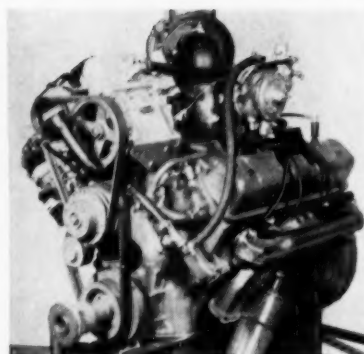
For lift trucks and all other types of combustion engine installations, be sure of getting the finest LP Gas control equipment. Always specify Rego... the best in the industry as well as the most complete line.

WRITE TODAY for complete REGO Catalog. Free!

THE BASTIAN-BLESSING COMPANY
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See our general ad on pages 4 and 5

REGO is a registered trade mark of The Bastian-Blessing Company



International Harvester Co.'s V-8 heavy duty truck engine.

ranging from 8.5:1 to 8.8:1, which gives the engines horsepower comparable to the gasoline models.

Other special features include colder manifolds, special valves with replaceable hard seats, heavy duty coils and distributors calibrated to the burning rate of L. P. gas. The dual-throat four barrel Century 3-C carburetor is standard equipment on all three engines.

Southern Tech adds carburetion instruction

Southern Technical Institute, Chamblee, Ga., is teaching L. P. gas carburetion. A separate unit in this subject was added to the curriculum of the regular two-year course in gas fuel utilization, effective with the winter quarter now in session.

Instructors are Earle A. Clifford, and W. L. Thomas.

Textbook for the course is the *Butane-Propane Power Manual*.

When spark plugs cut out on a hard pull

So your spark plugs were all right for quite a time, and then they commenced to cut out. Spark plug gaps widen with use, particularly if they are too hot for the service in which the engine is used. Take them out and set the gaps closer, making sure that they are all at exactly the same width. There are very few engines that need more than a .025 in. setting with LPG. And not very many engines with 6-volt ignition systems will operate satisfactorily with a gap of more than .030 in. when they start to get a little old.

When you put the plugs back in,

A Perfect Fit...

Without alteration, a Western Tank fits perfectly everytime. No wonder, Western is the nation's leading supplier of LP-Gas tanks to tractor manufacturers. The extremely close tolerances demanded by tractor manufacturers are standard specifications for all Western Tanks. For your protection and your customer's satisfaction, always be sure of superior quality by specifying a Western motor fuel or tractor tank.



You're no more than a few days away . . . Anywhere in the USA . . . when you order a **WESTERN**

**A Complete line of
PERFECT FIT Tanks is IN STOCK
at a Western Distributor near you...**

Box 1330
Lubbock, Texas
Phone PO 5-9474

Dallas Transfer &
Terminal Warehouse

Santa Fe Bldg.
Unit No. 2, Ph. RA-7111
Dallas, Texas



Arkansas Foundry Co.
Little Rock, Ark.

The Binkley Company
Oklahoma City, Okla.
Brungart & Jennings
Birmingham, Ala.

Gene Bumpus, Inc.
Plainview, Texas

Chickasha Gin &
Mill Supply
Chickasha, Okla.

General Tank &
Equipment Co.
San Antonio, Texas

Illinois Auto Electric Co.
Chicago, Ill.

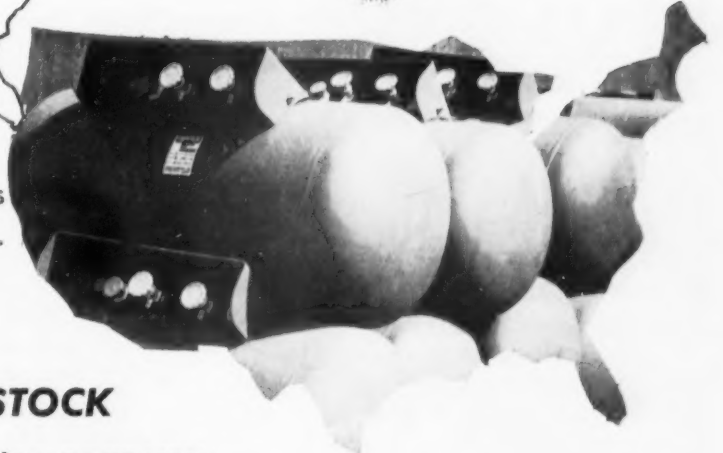
Nebraska Propane Gas,
Kearney, Nebraska
Sleeper Equip. Co.
St. Louis, Mo.

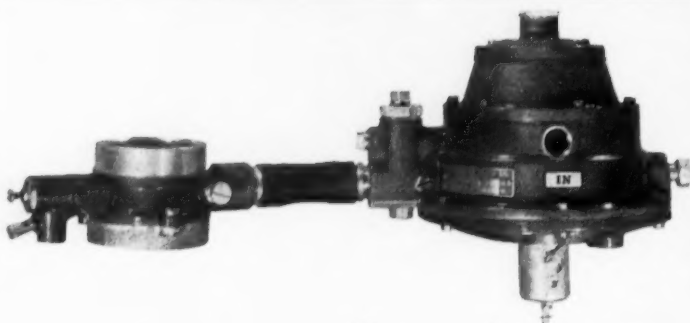
The Moore Company
Sikeston, Mo.

Southwest Gas Equip.
Liberal, Kansas

Superior Supply Co.
Kansas City, Mo.

Tide LPG, Inc.
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"Talk About Simplicity"



Any competent auto mechanic can make a DIX conversion. No special tools or parts required . . . Full instruction pamphlet available upon request.

With DIX . . . You Save on Service



DIX CARBURETOR COMPANY

6605 S. WILSON AVE.

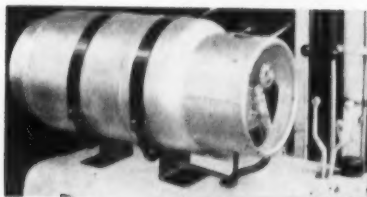
LOS ANGELES 1, CALIF.



LPG has made the use of fork lift trucks possible for the handling of produce in the Von's Grocery Co. warehouse, Los Angeles. The Towmotor shown above moves all of the fruits and vegetables for the stocking of Von's 26 supermarkets. Previously, the bulky and odd-shaped package of produce were moved with manually-operated clamp trucks. Von's changed this system so that pallets and a fork lift could be used, but this resulted in a problem. Vegetables are stored at 38° F and fruit at 32° F. Gasoline units would fume up these cold rooms and offset the advantages of cold storage by ripening fruit too fast. As the picture shows, it was LPG to the rescue to the great satisfaction of Norman Bolstad, produce division manager.



LPG TANK MOUNTING BRACKETS



For Materials Handling Equipment

Change cylinders in less than 1 minute! Use with any Materials Handling Equipment that has space for I.C.C. Tank; either 20, 33 1/3 or 43 1/2 lb. horizontal or vertical mounting. Positive locking holds tank firmly. Exceeds N.F.P.A. Requirements by 100%. See your distributor, or write.

USER PRICE \$24 Write for Dealer Prices

LPG FUEL INDICATOR KIT

End expense caused by "Out of Fuel." Red warning light flashes when LPG is low.

USER PRICE \$11.90

BRAKE MANUFACTURERS INC.

1711 Race

Cincinnati 10, Ohio

SELL THE LPG POWER MARKET

Plan now to build a steady volume of fuel sales by aggressively selling LPG Conversions to owners of tractors, trucks, stationary engines, buses, taxis and autos.

Begin by ordering your copy of the

BUTANE-PROPANE POWER MANUAL

Price \$3.50

(In California add 4% sales tax)

A deluxe edition in handy pocket-size, 23 chapters, 334 pages, completely illustrated. Published by

BUTANE-PROPANE News

198 So. Alvarado St., Los Angeles 57, Cal.

be careful not to screw them in too tight. The good old socket wrench with the 12 in. handle will really seat them solidly, and the chances are that it will be solidly enough to stretch the spark plug shell. This pulls the side electrode away from the center electrode, and increases the gap.

Proper tension with cast iron engine heads is as follows: 10 mm plugs, 14 lb/ft; 14 mm plugs, 30 lb/ft; 18 mm plugs, 34 lb/ft. If you do not have a torque wrench, you can quickly learn to do it by "feel." Using new spark plug gaskets, pull the plug down until you feel the gasket commence to crush. Now be careful—pull it just enough farther to crush the gasket down flat. You can quickly learn to gauge this tension if you will practice the installation a few times with new gaskets and your hand always at the same distance from the socket. Most mechanics can easily pull the plug down properly with the thumb against the socket and the fingers where they come naturally.

Of course the plugs will still miss if you screw them down on a

bunch of sand or rust scales. You can not get good electrical contact with the head unless the gasket is in full contact with the head and the shell. They may work all right for a short time, and then the rubbish under the gasket breaks up and leaves the plug loose in the hole. Better blow the grit out before the plugs are removed, and clean the seats again with the air hose or an oily rag before you put them back in. It takes a little time, but it may save a lot of trouble.

Some spark plug troubles are caused by bum cables

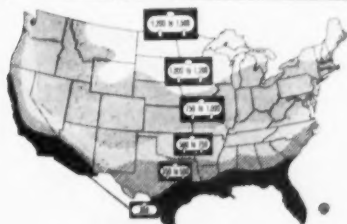
Before you replace a set of spark plugs that seem to have failed after only a few days or weeks of use, take a good look to see if the failure wasn't really caused by leaky spark plug wires.

If the insulation shows cracks or is swelled from soaking up oil, you do not need to go any farther—replace the cables instead of the plugs. Some ignition cables will leak rather badly even though they appear to be in good condition.

This will show up at night, driving the vehicle where there are no street lights. With the lights out and the hood up, lug the engine down against the brakes. If the cables are leaking you will see flashes like a fourth-of-July sparkler. No spark plugs are going to perform properly with poor cables. And when you change them, why not do the job right by soldering the terminals to the cables at both ends?

Many cases that appear to be spark plug trouble have been caused by arcing where the prongs of the caps have just been pushed into the cables. Burning the cable back an eighth of an inch into the insulation is not going to make any engine run better.

LP-Gas Tank Size Guide



SELL "LPG WEED BURNING" AND BUILD YOUR SUMMER LOAD



10 REASONS WHY the complete Manchester L.P. Gas hand burner unit (SE-287) is the best buy in weed control equipment.

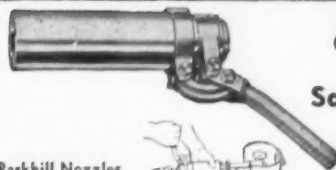
1. The (SE No. 270) Super "8" L.P. Gas vapor hand burner is extremely lightweight (4 lb.—the lightest part of the burner is at the very end where most burners are the heaviest). It is easy to use.
2. The Super "8" is eight feet long—this gets the heat away from the operator. Farmers are using the Super "8" extensively in 100 degree weather.
3. The added length of the Super "8" permits the operator to reach across most irrigation ditches with ease.
4. The new angle flame permits complete coverage of the entire ditch. Simply a twist of the wrist directs the highly effective L.P. Gas flame where it will do the most good. L.P.G. consumption is approximately 15 gallons per hour.
5. The windproof pilot is very easy to light and is made of a new heat resistant metal.
6. The original Manchester trigger valve permits use of flame only when needed, which assures added economy and working comfort when using the Super "8." Up to two miles of ditch or fencerow can be burned in an hour with the Manchester Super "8."
7. The 250 Gallon net L.P. Gas tank built to 250 pounds Working Pressure is complete with UL listed valves and supplies ample fuel for the Super "8" burner. Tank is fastened to sturdy trailer with four hold-down bolts. The trailer is equipped with two 6.70x15 new implement tires.
8. The six foot 360 degree spring boom is located on top of tank and keeps L.P. Gas hose off ground and away from wheels for maximum safety.
9. The trailer has a sturdy tractor hitch and an adjustable stand jack, ideal for rental work.
10. The complete unit is beautifully painted in light green and red colors.

Also available is a complete line of Manchester row and field crop burning equipment as well as truck and tractor conversion tanks for all of the popular makes including '56 and '57 models.



MANCHESTER
Welding & Fabricating Co.
2880 NORTON AVENUE, LYNWOOD, CALIFORNIA

NEwmark 1-9357 or NEvada 6-2839



Parkhill

Safety Hose Nozzles

- QUICKER FILLING
- SAFER OPERATION
- LOW MAINTENANCE

Parkhill Nozzles attach in 3 seconds... two operations... They're safe: Nozzle must be locked on before fuel can discharge. Upon release gas escapes away from hands...

No Cold Burns!

Write for Information

PARKHILL COMPANY

2264 Huntington Drive, San Marino, Calif.



CLASSIFIED Advertising

All Classified Advertising payable with order. Copy must reach publisher's office prior to the 1st of the month preceding publication. Address: Classified Advertising Material, BUTANE-PROPANE News, 198 S. Alvarado Street, Los Angeles 57, Calif.

DISPLAY CLASSIFIED

\$12.00 a column inch per issue. Choice of 18, 14, 12, 10 pt. display type for headings. Set with 1 pt. border. Maximum ad size 3". No cuts permitted. Publisher will set ad for maximum effect in space purchased.

UNDISPLAYED CLASSIFIED 15¢ a word. Set in 6 pt. type without border. \$3.00 minimum charge per insertion. If Blind Box number card of B-P News is used, count as five words.

POSITION WANTED. Undisplayed rate is one half of above rate, payable in advance.

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads.

SITUATION WANTED

ARE YOU SATISFIED WITH YOUR PRESENT SALES VOLUME? If not, this may be of interest to you. Aggressive, responsible individual fully qualified by ability and long experience to manage sales organization or to develop new sales division of LPG retail operation having multiple plants or dealer organization. Married, college graduate, excellent references, presently employed, available June 15, 1957. Interview can be arranged now or at LPG Convention at Chicago. Reply Box 23, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

FIELD ENGINEER, CARBURETION, FAMILIAR with internal combustion engines and L.P. conversions. Now have own business but tired of desk work. Desire position, design, installation and maintenance of carburetion. Pilot with own Plane, can cover large territory. Prefer Southwest, but not essential. L. A. Price, 639 N. Addison Rd., Villa Park, Illinois.

HELP WANTED

MAN FAMILIAR WITH L.P.G. INDUSTRY FROM GROUND UP to be sales representative for young, fast growing equipment distributor. Some travel involved. Sales experience not necessary. If you are not a top man do not reply. Advise age, experience, education, references, etc. Reply Box 28, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

DISTRIBUTORS WANTED

Nationally known manufacturer of L.P. Gas and NH₃ tanks wants reliable, aggressive distributors in Illinois, Indiana, Iowa, Kentucky and Wisconsin. Please write for details, sending qualifications to:

Box 23
BUTANE-PROPANE News
198 So. Alvarado St., Los Angeles 57, California

ENGINEER TO SELL L.P.GAS AND PROMOTE

Industrial L.P. Gas installations for national L.P. Gas marketing company. Prefer selling or servicing experience in industrial applications. Headquarters in Middle West or South West, but willing to travel. Engineering degree. Good personality. Age 25-35. Excellent opportunity with fast growing company. Furnish snapshot with full details. Reply Box 29, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

BUSINESS OPPORTUNITIES OFFERED

LPG BULK PLANTS. WE SPECIALIZE in selling petroleum properties throughout Midwest. Have number desirable plants for sale. OLE BRODD, PETROLEUM MARKETERS, 605 Produce Bank Bldg., Minneapolis, Minnesota.

PROPANE SUPPLY CO.

Nebraska location. Complete 30,000 gal. Bulk Plant; handles major brands of appliances. 1904 gross \$75,240; greater potential this year. 169 leased propane systems. Est. 9 years, other interests forcing sale. Complete \$45,000.00. Send for details.

REO
6 W. 10, Kansas City, Mo.

BUSINESS OPP. OFF.—Cont.

FOR SALE: MODERN PROPANE PLANT CENTRALLY located in New England Railroad Siding—Storage upward 60,000 gallons—Annual volume 1,500,000 gallon 100% retail cylinder business. Room for expansion. Reply Box 30, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

FOR SALE — TRUCKS - TRAILERS

FOR SALE—TRUCKS, TRAILERS—FOR something different in propane tanks, see Master Tank & Welding (Dallas) advertisement in this edition.

MAKES GAS DELIVERIES MORE PROFITABLE; This new 1800 WG U-69 Nor-Tex Twin Delivery Unit operates FASTER and EASIER... delivers more gas in less time! Equipped with high flow piping throughout. Mounted on your choice of truck or on your present truck chassis for only \$2,194.80 (including tax). Trim skirting, ICC lights, Viking mechanical seal pump, P.T.O. spline jack shaft and 50 ft. of filler hose. Call NOR-TEX PRODUCTS COMPANY collect, C-5416, Denton, Texas.

USED PROPANE DELIVERY TRUCKS, 1200 GALLONS W.C. Presently in use and being replaced with larger units. United Petroleum Gas Co., 4820 Excelsior Blvd., Minneapolis 16, Minnesota.

FOR SALE—USED DELIVERY TRUCKS. Several late model Propane Delivery trucks, 1200 to 1600 WG, piped and ready to go. EASY TERMS. White River Distributors, Inc., Phone 570, Batesville, Arkansas.

1950 INTERNATIONAL L160 WITH 1200 Gallon McNamara propane delivery unit. New tires, 100 ft. hoses, Pinto meter, L.P. carburetion, radio, etc. In excellent condition. Will sell for best offer received not later than May 1st. Wesco Gas & Appliance Co., Sandwich, Illinois.

ANY USER WILL TELL YOU this 1400 WG U-69 Twin "will earn more... cost less IN EVERY WAY!" Mount this popular delivery unit on a new truck of your choice or on a truck you now have for only \$1,935.00 (Includes tax and mounting cost). It delivers more gas in less time because it's equipped with high flow piping throughout. Trim skirting, P.T.O. spline jack shaft, Viking mechanical seal pump, 50 ft. filler hose and ICC lights. Painted white enamel over red oxide. Call NOR-TEX PRODUCTS COMPANY collect, C-5416, Denton, Texas.

DELIVERY UNITS: SINGLE OR Twin Barrel. Our prices are competitive. We invite comparison between the equipment and price on our units with any competitive units. We believe we can give you the highest payloads per pound of gross vehicle weight. Write, wire, or phone, Lubbock Machine & Supply Co., Inc. Drawer 1589, Lubbock, Texas.

HOW TO FIND A BUYER

You can do it quickly, inexpensively with a classified ad in BUTANE-PROPANE NEWS.

FOR SALE—TRUCKS - TRAILERS - Cont.

TRANSPORTS: SINGLE OR TWIN barrel; new or used; for lease, or sale on budget or rental sale plan. If you want maximum payload, with all of the latest equipment engineered to fit your truck, roads, and your hauling problem, get the LMC PAYLOADER. Contact Lubbock Machine & Supply Co., Inc., Drawer 1589, Lubbock, Texas.

FOR SALE—TANKS - CYLINDERS

1951 MODEL PROPANE TRINITY TANK, REYCO Undercarriage. Water capacity 5650; 1100/20 new recaps. \$4,000.00. Write to Lloyd Gordon, Regent, North Dakota.

SKID TANKS

— IN STOCK NOW —

3000 gallon size built especially rugged for oil field use. Write, wire or phone Lubbock Machine & Supply Co., Inc. P. O. Drawer 1589 Lubbock, Texas

CLEARANCE SALE, NEW 200 GAL. TANKS BARGAINS WHILE THEY LAST

Large stock in warehouse, brand new, built for AA but suitable for LPG with slight change of fittings. Dimensions, 30 x 72 in. Finish, white enamel. Fully guaranteed. Immediate delivery. Location, Minneapolis, Minn. Act fast and save \$ \$ \$.

POLLARD MANUFACTURING CO.
2300 Foshay Tower, Minneapolis 2, Minn.

ABOVE GROUND PROPANE TANKS

Long Term Financing Available

FREE DELIVERY
In Our Trade Territory

Write TODAY For Prices and Details

WHITE RIVER
DISTRIBUTORS, INC.
Batesville, Arkansas

TEXAS
MANUFACTURING CO.
Gainesville, Texas

CLASSIFIED Advertising



FOR SALE—TANKS—CYLS—Cont.

1800 WG MODEL 100, 250 LB. WP TRIM skirted tank, mounted on 1957 Chev. Model 6403 chassis, 2 speed, 9 x 22 1/2, 10 ply rear tires, ONLY \$4,448.00 Fed Tax paid. Packaged Plumbing, meter, etc. available at regular prices. EASY TERMS. White River Distributors, Inc., Batesville, Arkansas.

PROPANE TRUCK TANKS

Model 100 with Trim Skirting.

Prices INCLUDE Federal Tax and Mounting on Chassis.

1400 WG — \$1,534.00
1500 WG — \$1,630.00
1800 WG — \$1,843.00
2000 WG — \$2,081.00
2200 WG — \$2,318.00

Your choice of 5 Models, 600 to 2300 WG Twin or Single

Packaged Plumbing, pumps, meters, etc., and all makes of trucks available

LOW DOWN PAYMENT, up to 2 Years to Pay. Write for Descriptive Folder

WHITE RIVER DISTRIBUTORS, INC.
Batesville, Arkansas

FOR SALE—MISCELLANEOUS

MOTOROLA 60-WATT 2-WAY RADIOS, Model FMTR-140, 150 mc. 6 or 12-volt. Excellent condition, complete with crystals for your frequency, \$275.00 each. R. J. Walker, P. O. Box 189, Coffeyville, Kansas.

FOR SALE: ONE NEW AGRICULTURE DITCH BURNER Model 4T-40-250. 15 foot boom, 250 gallon tank on 4 wheel trailer. Tires included. \$850.00. Major Gas Company, Fairview, Okla.

SERVEL REFRIGERATORS CLEAN—ALL CHECKED OK
Model M500A\$15.00 each
Model N500A\$18.00 each
In lots of 12 or more.
FRED A. BROWN COMPANY
100 E. Allegheny Avenue
Philadelphia 34, Penna.
Est. 1918 REgent 9-1130

FOR SALE USED APARTMENT SIZE WELBILT GAS RANGES

20" — all white porcelain — in wholesale quantities — \$12.00 FOB Brooklyn.

Send for photos.
AJAX FURNITURE OUTLET INC.
1000 Rockaway Ave., Brooklyn, N. Y.
HY-acineth 8 6121

FOR SALE—MISC.—Cont.

DECALS MADE FOR TRUCKS, EQUIPMENT. Small or large quantities. Catalog free. Mathews Co., 827 S. Harvey, Oak Park, Ill.

FOR SALE—IMMEDIATE DELIVERY: Eureka Smokehouse Burner Assemblies! For meat smoke houses using bottled gas. Completely automatic. Clean filtered smoke. Distributes heat uniformly. Low gas consumption. Automatic temperature and pilot control. Less product shrinkage. Easily installed. Write for descriptive pamphlet. Eureka Equipment Company, P. O. Box 396, Beloit, Wisconsin.

SERVEL GAS REFRIGERATORS

BN600A W600A S400A

Used: guaranteed in good operating order. Excellent condition. Low delivery cost anywhere. Send for illustrated folder NOW and be ready for your Spring selling season.

BEACH REFRIGERATOR CO.

196-11 Northern Blvd. Flushing 58, N. Y.
Phone Flushing 7-6161

WANTED—MISCELLANEOUS

WANTED TO TRADE: 100—100% CAPACITY Hackney light weight cylinders for 100 gallon capacity used "pigs." IOWA. Reply Box 31, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WANTED: USED 500 AND 1000 GALLON PROPANE TANKS, any number, Phone 110, Lebanon Propane Gas & Appliance Co., Lebanon, Missouri.

WANTED: 1 USED SINGLE BARREL DEAN truck pump for propane gas. Naples Gas Service, P. O. Box 356, Naples, Florida.

WANTED: USED 100# U-69 STORAGE TANKS 6,000 to 15,000 gallon capacity. State condition, age, price and equipment on tanks. Reply Box 1, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

WANTED: CONTRACT TO HAUL PROPANE AND BUTANE for seven new 7600 transports and tractors. Phone 162, SP Corporation, Lebanon, Missouri.

WANTED: 18,000 GALLON BUTANE OR PROPANE tank. Will consider other sizes. State particulars in reply. Reply Box 15, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, California.

WILL BUY YOUR USED PROPANE OR A. A. BULK tank for cash. Reply Box 17, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, California.

BUSINESS RECORDS

BUSINESS RECORD FORMS. ALL-WEATHER EZE-SNAP delivery invoices, for use when making LP gas metered truck deliveries. 1000 sets (3 part) imprinted with name, address and telephone. \$17.50 per 1000 sets. DEGREE DAY SYSTEMS, WOODSIDE 77, L. I., N. Y.

MISCELLANEOUS SERVICES

STOP—THAT—HUM and Hard Shifting Automatic, Std. and Rear Ends. Specify kind of unit. Approved by Car Manufacturers State Serv. Mgr. Guaranteed. Send \$2.95 to Jimmy Ray, West Hollywood, Florida.

PROFESSIONAL SERVICES

CLIENTS OFTEN INCREASE PROFITS 2% or more by using my cost reducing bulk and bottle operating procedures and sales procedures. Property evaluations and special assignments also handled. Floyd F. Campbell, Management Counselor, 821 Crofton Ave., Webster Grove 19, Mo.

LP GAS INSTALLATIONS and ANHYDROUS AMMONIA PLANTS DESIGNED AND INSTALLED

"There's No Substitute For Experience"

PEACOCK CORPORATION
Paul E. Peacock, Jr., Pres.
Box 268, Westfield, N. J.

INDIVIDUALLY DESIGNED Ammonia and LP Gas Plants

H. Emerson Thomas & Assoc., Inc.
Westfield, N. J.

L. P. GAS INSURANCE

Have your agent write us about our Complete and Comprehensive Coverage for Adequate Limits of Liability at Reasonable and Normal Rates with Specialized Safety Engineering and Claim Service. Available only in Alabama, Arkansas, Arizona, Georgia, Kansas, Louisiana, Mississippi, New Mexico, Oklahoma and Texas.

PAN AMERICAN FIRE & CASUALTY COMPANY
Earl W. Gammage, President
P. O. Box 1662 Houston, Texas

SELL MORE WITH DISPLAY CLASSIFIED ADS

This is an example of the attention getting type faces available in display ads in the BPN Classified Section. Cost is only \$12.00 a column inch per issue, an ad this size (3") is \$36.00. The large lines above are set in 18 pt. Other available sizes are shown below.

14 POINT DISPLAY
12 POINT DISPLAY
10 POINT DISPLAY

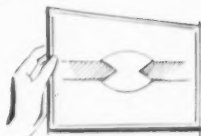
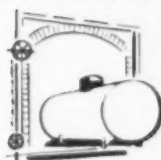
Body type is set in 6 pt. like this sample. An average of 6 words to the line.

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